The OIL WEEKLY

15¢ A COPY

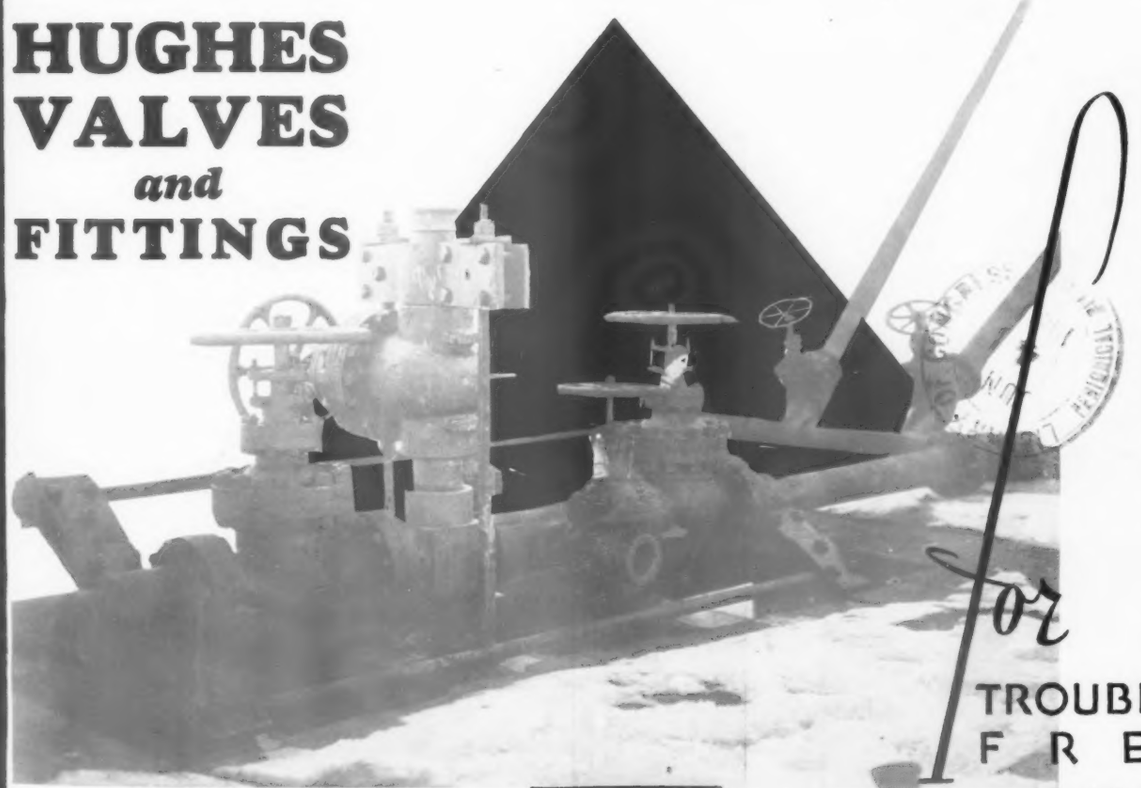
Exclusively Devoted To The Production and Transportation of Oil and Gas

Engineering News Statistics

May 23, 1930 Volume 57. No. 10

Make Your Hook-up *with*...

HUGHES VALVES *and* FITTINGS



for

TROUBLE-FREE PERFORMANCE

"Sold By Supply Stores Everywhere"

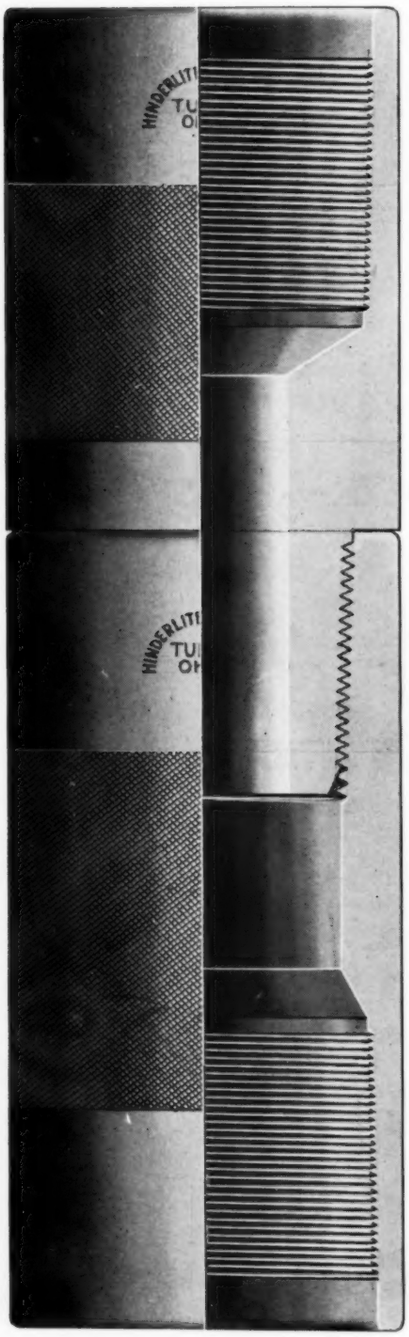
HUGHES TOOL COMPANY

Service Plants
Los Angeles, Calif.
Oklahoma City, Okla.

Main Office and Plant
HOUSTON, TEXAS

Export Offices
Woolworth Building,
New York City

Lathe Cut Threads



. . . . cut with a single point tool on Rotary Tool Joints that have already undergone a scientific, electrical, automatically controlled heat treating process, prevent warpage and other irregularities which cause washouts.

Every Thread the Same

Construction of threaded section accommodates ordinary pipe creep.

DRILL COLLARS
SUBSTITUTES
OVERSHOTS
BUSHINGS
SHOES
HOOKS
MILLS
TAPS
BITS

HONEST TOOLS

HINDERLITER

ROTARY — STANDARD CABLE

The OIL WEEKLY. Issued weekly by the Gulf Publishing Co., 3301 Buffalo Drive, Houston, Texas. Subscription price $1.00 per year; 15 cents per copy. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879.

PROGRESS

IN the field of *transportation* nothing indicates progress more clearly than the time required for a message to travel from New York to Boston: In 1789, by coach, 7 *days*; in 1927, by air mail, *hours*.

In the field of *oil-industry pumps*, nothing indicates progress more clearly than a comparison of present-day models with those in use before GASO entered the field.

GASO Pumps are unmatched for oil-industry service because they are designed exclusively for oil-industry use. The GASO organization lives in the heart of the industry; knows the conditions under which the pumps must operate; concentrates its energies on the fulfillment of oil-industry needs.

Our 64-page catalog will be mailed on request.

GASO PUMP & BURNER MFG. CO.

Tulsa, Oklahoma

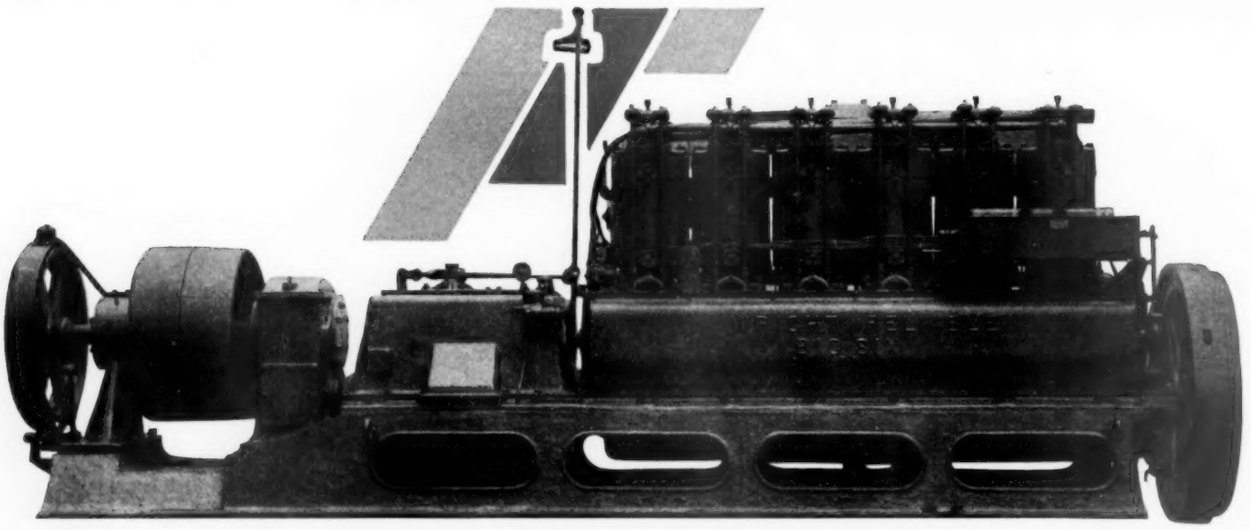
Fort Worth, Texas
New York, N. Y.

(Left) Gaso Fig. 1508 All Timken Bearing Pump. Interchangeable liners give capacities from 63 bbls. per hr. at 800 lbs. pressure to 250 bbls. at 250 lbs. Arranged for any type drive.

(Right) Gaso Pumping Unit with Fig 710 Pump and V-rope drive from Buda 85 H.P. Gas or Gasoline Engine. Capacities from 34 bbls. per hr. at 1400 lbs. to 500 bbls. at 350 lbs.

GASO PUMPS

for every oil industry need



Only $12 Per Day Operating Cost

with this

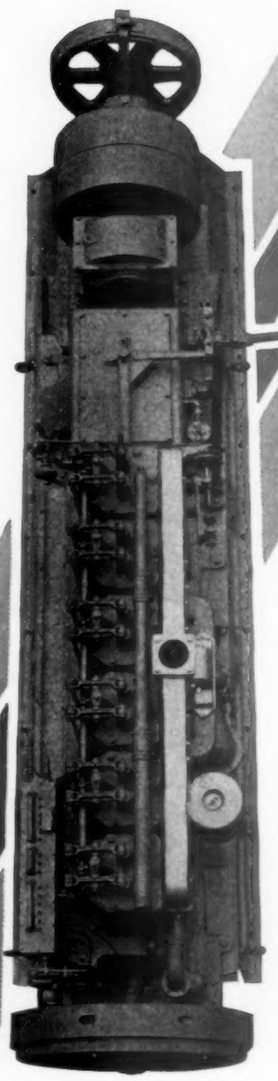
WRIGHT RELIABLE
DRILLING ENGINE

DOWN in Texas, H. H. Whitmire drilled a well south of Merkel. At 2200 feet, the hole was full of water, but his WRIGHT RELIABLE Drilling Engine pulled the 7" x 30' bailer through the water with "power to spare"---as Mr. Whitmire wrote us.

He says too, that both his crews are better satisfied with the Wright than the steam engine they formerly used. His fuel cost with the Wright Reliable has averaged only 68 gallons of gasoline and 2 3-4 gallons of lubricating oil each 24 hours---a total cost of about $12.00 per day---which he claims is a saving of about $35.00 in fuel cost per day, over boiler and steam engine.

Would you too like to enjoy these savings, combined with the most reliable power available today? Send in the coupon today for full details of these superb, money saving drilling engines.

WRIGHT ENGINE STOCKS CARRIED AT WICHITA, KANSAS RUSSELL, KANSAS & HOBBS, NEW MEXICO



MANUFACTURED BY

THE WRIGHT MACHINE CO., INC.

ESTABLISHED 1880

Owensboro, Kentucky, U. S. A.

Distributed in the Mid-Continent Field by the 15 Stores of

The BRIDGEPORT MACHINE CO.

WICHITA, KANSAS

Backed by
BRIDGEPORT'S 24-Hour
Day & Night Service

THE
WRIGHT
MACHINE CO.
Owensboro, Kentucky

Gentlemen—Please send me full particulars of your WRIGHT reliable drilling engines.

Name_____

Street No._____ City_____

Company_____ State_____

1500 sacks of cement intimately mixed and properly placed in an hour's time—all in the day's work for a Halliburton crew.

The Halliburton organization is not content to rest on past achievement. Day after day, engineers, chemists and mechanics are at work seeking to improve still further processes and methods which already represent the utmost in efficiency. Never for a moment does Halliburton lose sight of the obligation it assumed as universally acknowledged leader in its field.

HALLIBURTON

OIL WELL CEMENTING CO.

Duncan, Oklahoma

May we send you, without cost or obligation, our publication, THE CEMENTER? Issued periodically, it contains interesting oil field engineering news, spiced with a dash of humor. Your name and address is the subscription price.

Halliburton Oil Well Cementing Co., Dept. OW, Duncan, Okla.

Without cost or obligation, please place my name on the list to receive THE CEMENTER regularly as issued.

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Company .....

Address .....

"Here, Lad—

I'm with you in putting this fellow 'Arc Welding' to work for us, but we've got to know more about him before we go ahead."

The Lincoln "Stable-Arc" Welder

— welds easier
— makes better welds
— permits greater output because of the steady uniform arc throughout entire welding range, which is the result of:

- Variable voltage design
- Laminated magnetic circuit
- Separately-excited generator field
- Double control of welding heat
- All steel construction

No other welder has all these features.

"No, Pop—

You mean before we go behind.

The way I look at it, the taking on of an arc welding machine isn't one whit different from taking on an employee.

First he's got to prove to us that he has specialized experience and thinks straight.

It's a matter of record that the thinking behind the Lincoln *'Stable-Arc'* welder has been straight since it pioneered the art.

When those people took up specialization in arc welding equipment they advocated variable voltage.

Those not in welder specialization said 'No'.

How many say 'No' today?

How many say 'Yes' today?

And again comparing welders to employees—do you prefer 'Yes Men'— or specialists in the Know?"

The Lincoln Electric Co.,
Dept. No. 33-5 Cleveland, O.

W-144

LINCOLN "Stable-Arc" WELDER

BUTLER
READY-MADE
STEEL BUILDINGS

FOR ALL OIL FIELD PURPOSES

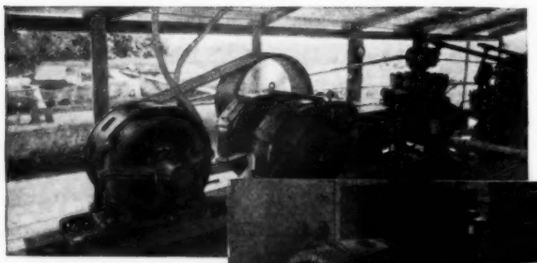
FIELD offices, dwellings, pump stations, power belt houses, flowing plants, refineries, material supply depots, warehouses, bunk and mess halls, garages . . . Butler Ready-Made Steel Buildings shelter practically every activity of the oil fields. And the reasons . . . fire-safeness to offset remoteness from fire protection, complete materials, ready made and readily transported to outpost operations, speed in erection by whatever sort of labor crew available, lower investment and maintenance charges, structural qualities which insure permanence, yet which permit enlarging or taking down and re-erection. Send for the new booklet picturing many Butler installations. Call upon Butler engineers to supply full details and prices on any type structure in mind.

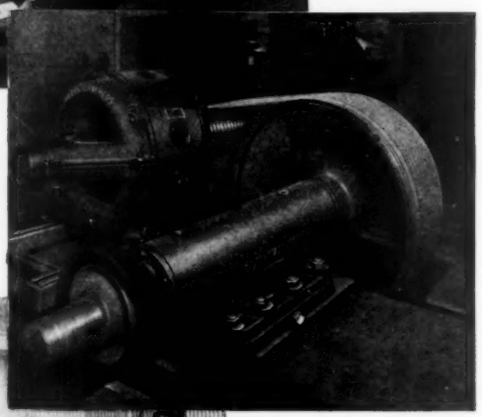
BUTLER MANUFACTURING COMPANY

1246 Eastern Avenue
Kansas City, Mo.

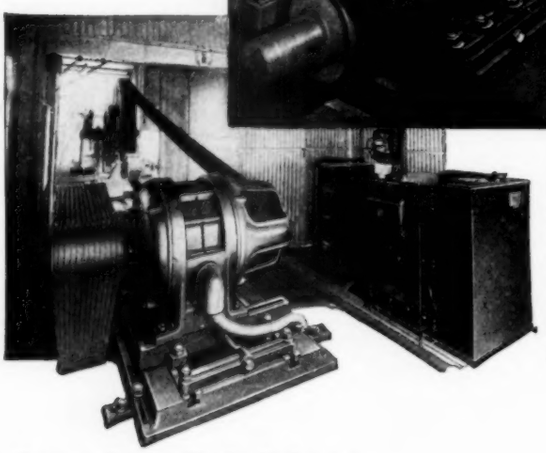
946 Sixth Ave., S. E.
Minneapolis, Minn.

It takes good machines to satisfy the oil industry — these are doing it





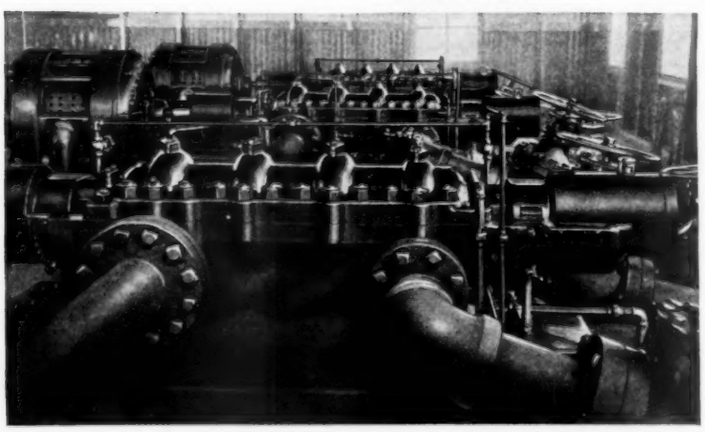
200 h.p., Type "ANY" Slip Ring Motor and Texrope Drive operating Slush Pumps.



150 h.p. "ANY" Motor driving Draw Works and Table through Texrope Driven Single Reduction Unit.

Texrope Driven Single Reduction Unit with Allis-Chalmers Motor and Control, arranged for Cable Tool Drilling.

25,000 Bbl. per day Type "M" Centrifugal Pipe Line Pumps driven by 225 h.p. Allis-Chalmers Motors.



It is in the oil fields that quality machinery shows its real worth. There is less time out for repairs or adjustments and fewer delays for getting new parts. A little extra care taken in the building of a motor or pump at the factory often saves trouble in the field.

Allis-Chalmers has always tried to build good machinery. Whether it is a 100,000-k.w. steam turbine and alternator unit or a 15-h.p. motor or Texrope Drive, each is built with enough reserve power to carry the heaviest loads.

There is an Allis-Chalmers motor and control for every oil field job, two-speed motors for pumping and drilling, special drilling motors with enclosed slip-rings and drip proof housings, totally enclosed fan-cooled motors for exposed locations, and standard, general purpose motors for driving pumps, compressors, etc.

The positive and flexible, short center, Texrope Drive is popular in all branches of the oil industry. It is used with Allis-Chalmers single and double reduction units, for operating slush pumps, pipe line pumps, compressors, and for driving many other types of oil field equipment.

Allis-Chalmers centrifugal pumps are built for a wide variety of heads and capacities. Pipe line pumps are built in both centrifugal and plunger types. Gas engine driven compressors are suitable for use in booster stations on gas lines.

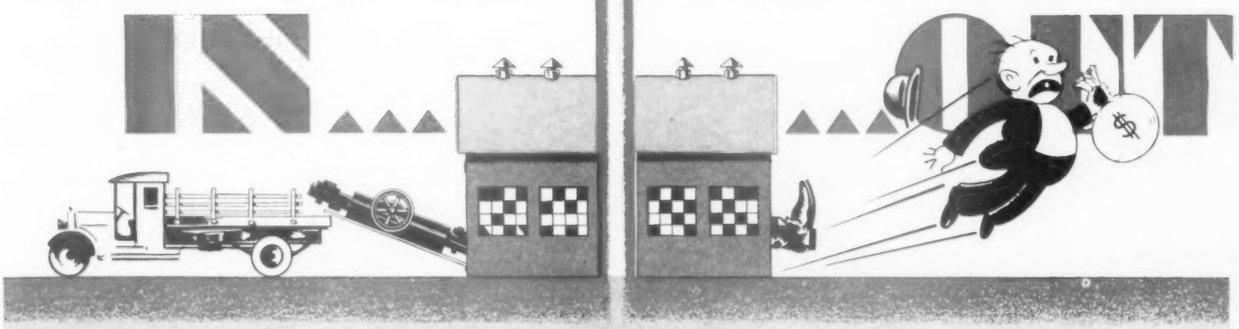
This is some of the equipment that Allis-Chalmers, as manufacturers of power, electrical and industrial machinery, builds for the petroleum industry. Write for bulletins.

ALLIS-CHALMERS MFG. CO.
MILWAUKEE, WIS.
Sales Offices in all Principal Cities

ALLIS-CHALMERS

WHEN "SUPER 2s" GO IN...

High Operating Cost Goes ...OUT



In plants equipped with CLARK "Super 2" Engines, both maintenance and fuel costs are reduced to the very minimum.

During a half century of experience in engine building, CLARK has developed machines that are sturdy, dependable and durable to the extreme. The perfected "Super 2" design —with the patented CLARK Fuel Injector—secures a saving of one-third the fuel required by ordinary 2-cycle engines.

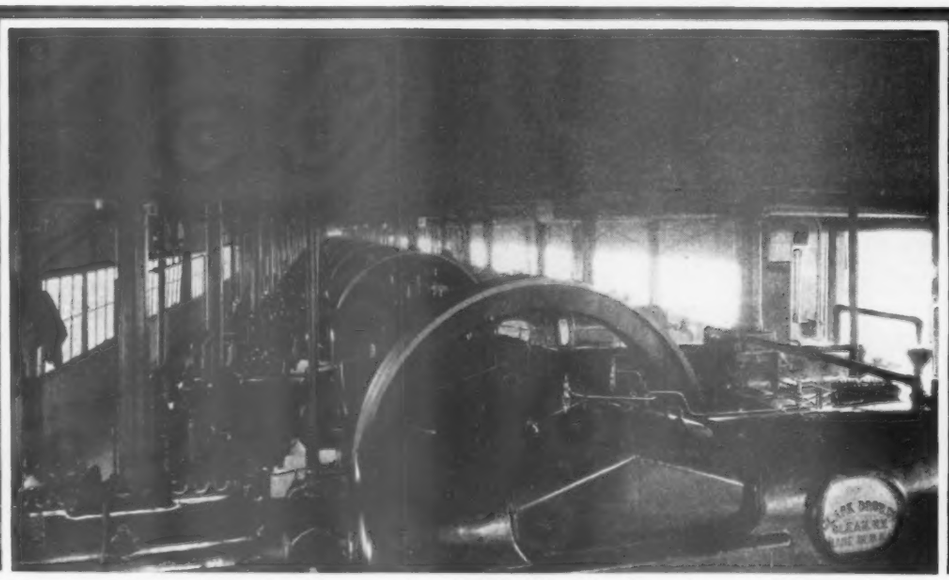
When CLARK "Super 2s" go in, high operation costs goes out!

Shown below are ten 200 H. P. Super 2s in the I. T. I. O. Company Vern Gasoline Plant at Oklahoma City.

CLARK BROS. COMPANY Olean, N. Y.
Export Office: 150 Broadway, New York City.
Mid-Continent Sales Offices: Tulsa and Fort Worth.
Warehouses: Tulsa, Oklahoma; McCamey and Sweetwater, Texas; Artesia, New Mexico. California: Smith, Booth, Usher Co., 228 South Central Ave., Los Angeles.

CLARK

LOOK IN THE NEW PLANTS FOR CLARK "SUPER 2s"



To Insure Prompt Service....

The South Chester Tube Company has established distributing centers throughout the oil and gas fields of the United States. We carry large stocks at Houston, Texas; Thenard, California; Cody and Kemmerer, Wyoming; Kevin, Montana; Paintsville, Kentucky; Charleston and Danville, W. Virginia. From these strategic distributing centers we can provide prompt service to most points in the oil fields with casings and line pipe.

It has been our aim, for over thirty years, to produce casing and line pipe of the highest quality and workmanship—and at the same time maintain the quickest and best service possible to every customer.

We also specialize in double length line pipe, of which the welds are as strong as the metal of the pipe.

SOUTH CHESTER TUBE COMPANY—Chester, Pa.

District Sales Managers:

W. E. Gibson
801 Columbia Bank Bldg.,
Pittsburgh, Pa.

J. P. Cooney
715-716 A. G. Bartlett Bldg.,
Los Angeles, Cal.

H. A. Morse
30 Church Street,
New York City

J. P. Steele,
305 Petroleum Bldg.,
Fort Worth, Texas

District Offices:

J. D. Swartz, 1231 S. Evanston St., Tulsa, Oklahoma
H. S. Chancey, 2218 Mills St., Houston, Texas
E. L. Moseley, 3114 Tenth Street, Wichita Falls, Texas
District Warehouses: Houston, Texas; Thenard, Calif.; San Francisco, Calif.

Distributors:

Prichard Supply Co.,
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LeValley, McLeod, Kinkaid Co., Inc.
Elmira and Olean, N. Y.
Petroleum Supply Co.,
Houston, Tex., Norphlet, Ark.

Wagner Supply Co.,
Fort Worth, Cross Plains, Breckenridge, Iraan, Wink, Forsan and Odessa, Texas
W. K. Henderson Iron Works & Supply Co.,
Shreveport, La.

Pelican Well Tool & Supply Co.,
Shreveport, La.

United Oil Well Supply Co.,
712 A. G. Bartlett Bldg.,
Los Angeles, Calif.

Great Northern Tool & Supply Co.,
Billings and Kevin, Mont.

Kemmerer and Cody, Wyo.

United Pipe & Supply Co.,
Charleston, Danville, W. Va.,
Paintsville, Ky.

CHESTER

STEEL SPECIALISTS IN CASING FOR DEEP WELL DRILLING **CASING**

LINE PIPE

Even moving a derrick

"Caterpillar" Tractors did the work. Their wide tracks provided sure traction on soft, soggy ground. The derrick is 122 feet high and 24 feet square. It has double rigs and the bull wheel, calf wheel and crown blocks were not removed — total weight around 60,000 pounds. Two "Caterpillar" Sixtys licked this tough job in Turner Valley, Alberta.

Prices—f. o. b. Peoria, Illinois

TEN	$1100	TWENTY	$1900
FIFTEEN	$1450	THIRTY	$2375
SIXTY	$4175		

Caterpillar Tractor Co.

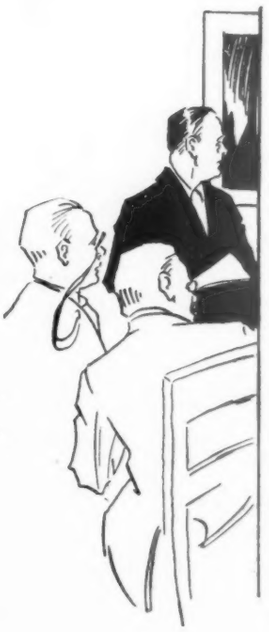
PEORIA, ILLINOIS *and* SAN LEANDRO, CALIF., U. S. A.
Track-type Tractors ✓ Combines ✓ Road Machinery
(There is a "Caterpillar" Dealer Near You)

CATERPILLAR
REG. U.S. PAT. OFF.
TRACTOR

RADIO PROGRAMS

The Houston National Radio Programs, presenting the Houston National Players in sketches based on the life of Sam Houston, and the Houston National Concert Orchestra, come to you each Monday evening at 9 o'clock from the skyline studios of KPRC. Real radio entertainment—for YOU. Tune in!

Responsibility



From the Qualification Card of the Eastman Kodak Company we quote three of five traits considered of leading importance in responsible executives.

1. "Consider his ability to meet and get along with other people."
2. "Consider extent to which he can be relied on."
3. "Consider ability to reach sound decisions and to handle unusual situations."

When you employ a bank you certainly give it responsible work to do. Why not list its qualifications as you would those for other important positions in your company?

The Houston National Welcomes These Considerations:

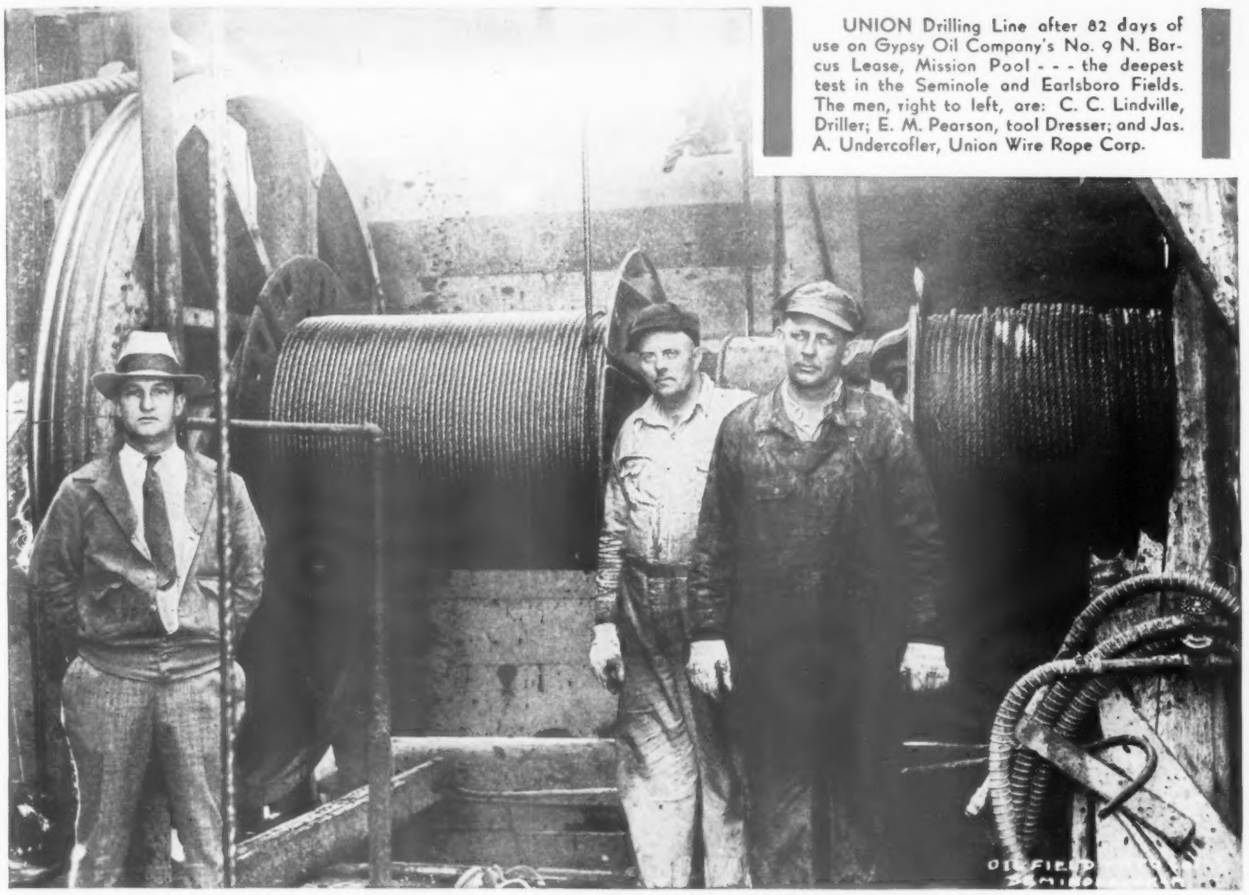
1. Its ability to get along with other people. The official family of a large bank acquires a liberal education in human nature. If it handles your business with uniform ability and courtesy it meets the above qualifications.

2. Extent to which it can be relied on. For this qualification you have the bank's financial statements, its list of directors, and its standing among the banking fraternity to guide you.

3. Ability to reach sound decisions and to handle unusual situations. The ability depends on the good judgment of the bank's officers, their resourcefulness and energy in their customers' behalf.

HOUSTON NATIONAL BANK

Main at Franklin



UNION Drilling Line after 82 days of use on Gypsy Oil Company's No. 9 N. Barcus Lease, Mission Pool - - - the deepest test in the Seminole and Earlsboro Fields. The men, right to left, are: C. C. Lindville, Driller; E. M. Pearson, tool Dresser; and Jas. A. Undercofler, Union Wire Rope Corp.

UNION UNIFORMITY leads to LOWER DRILLING COSTS

UNION Wire Lines are *uniform* - - - they must be uniform because every step in the manufacture is taken in our own plant, and thorough tests at every step insure the constant quality of every wire, every strand and every finished rope. Unvarying uniformity assures consistently good performance, eliminating unnecessary time, labor and replacement costs.

TRADE MARK

UNION WIRE ROPE CORPORATION

3 North Madison Ave., Tulsa, Okla.

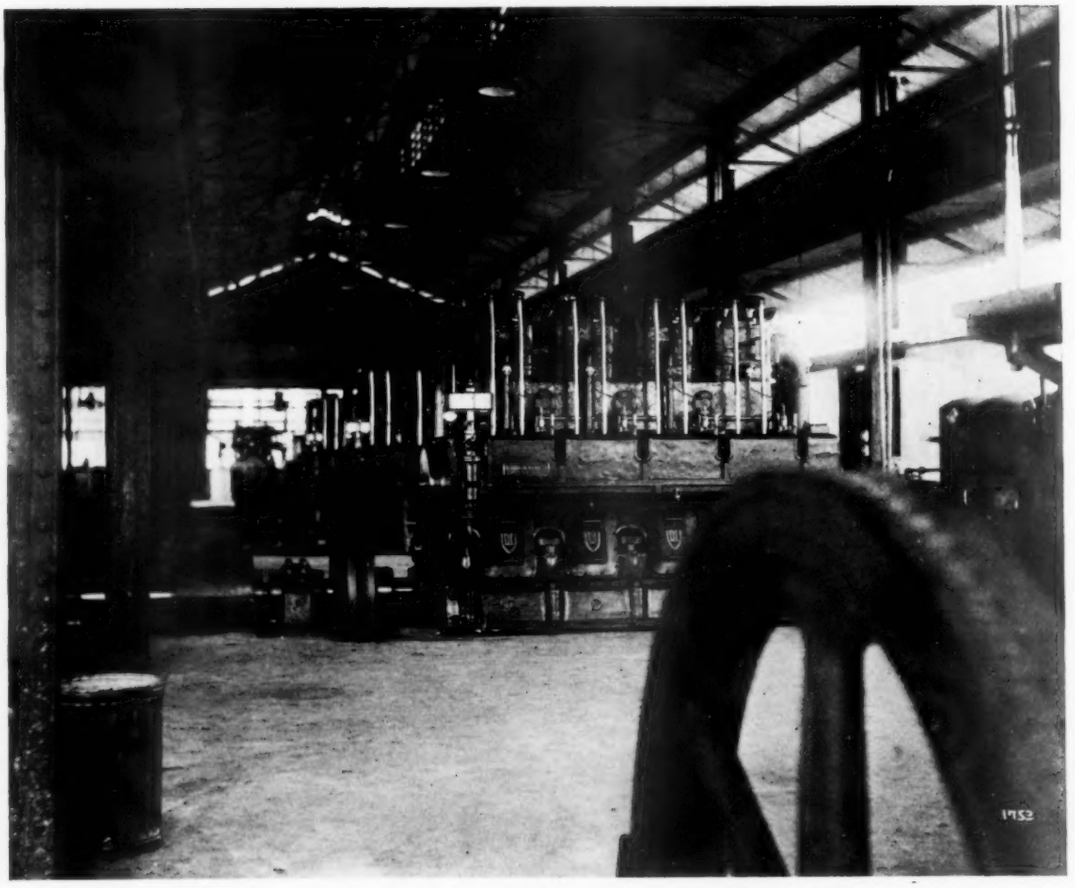
Oil Country Sales and Export Offices: 338 Kennedy Building, Tulsa
Branch Office and Warehouse: Portland, Ore.

Factory: 21st and Manchester, Kansas City Mo.

JARECKI MANUFACTURING COMPANY

Mid-Continent and Eastern Oil Fields Distributors ◆ ◆ STOCKS AT ALL STORES

UNION WIRE LINES



4 CYLINDER, 260 H.P. SOLID INJECTION DE LA VERGNE DIESELS

Demonstrating
De La Vergne
Superiority

The above photograph shows four De La Vergne Diesels in one of the South American pumping stations of the Andian National Corp. Ltd., of Toronto.

This company uses De La Vergne Diesels exclusively and has in daily operation 46 engines, aggregating 14,000 horsepower.

Necessity for uninterrupted, efficient and trouble-free performance has led this company and others, to standardize on De La Vergne Diesels as insurance against costly shut-downs.

If your future requirements involve the use of Diesels we shall be glad, upon request and without cost or obligation, to acquaint you with the superior features and meritorious performance of De La Vergne Engines.

I. P. Morris & De La Vergne, Inc.

RICHMOND & NORRIS STS. -:- PHILADELPHIA, PA.

Branch Offices:

33 Rector St., New York, N. Y.
615 Mills Bldg., El Paso, Texas
1016 Second National Bank Bldg., Houston
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BJ takes the danger out of deep drilling

BJ TRIPLE-EXTRA-HEAVY
CENTER LATCH ELEVATOR
(Wilson)

PRESENTS the convenience and easy handling of companion types... known and used the world over... plus twice the strength needed to carry safely the longest string ever run.

In every "string" there is a weakest link... BJ Weldless Links are the strongest

7 Types of BJ Center Latch Elevators now available:

Light Weight
Medium Weight
Extra-Heavy
Double-Extra-Heavy
Triple-Extra-Heavy
Extra-Heavy Tubing
Double-Extra-Heavy Tubing

(Write us for lists of sizes and complete information)

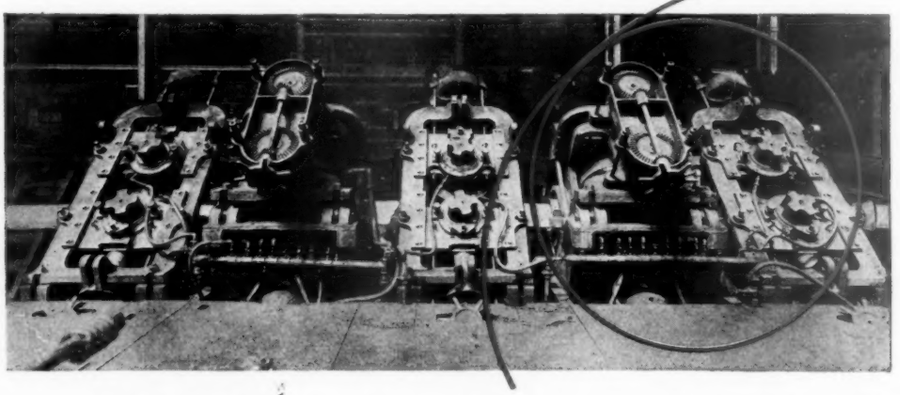
BYRON JACKSON CO.
Established 1872

General Offices: 2150 East Slauson Avenue, Los Angeles, California.

Tulsa Oklahoma City Houston
Shreveport New York City

J&L SEAMLESS

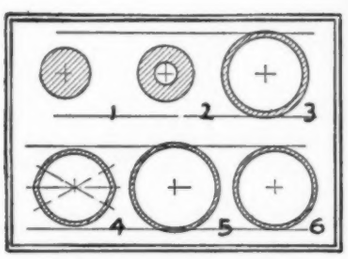
Extra Rolling in the Mill



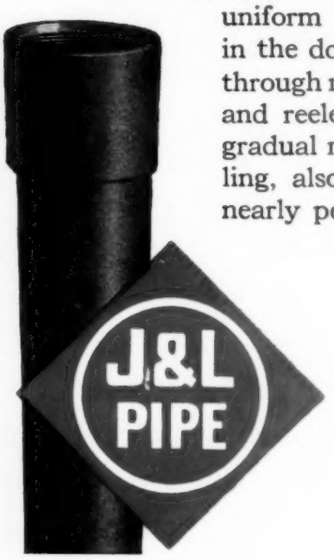
Pictured at the right are the five stands of hot size rolls employed by J & L to bring J & L Seamless Pipe to final dimensions.

for Extra Service in the Field

In sizing its Seamless Pipe J & L uses two extra stands of rolls so that the pipe is brought to final dimensions, by five easy stages. Thus J & L continues to retain through the hot size mill the highly uniform wall thickness that is obtained in the double piercing process and retained through rolling in the powerful J&L plug mills and reelers, the largest in existence. This gradual reduction to final size, by extra rolling, also results in production of pipe as nearly perfect in round as seamless casing, tubing and drill pipe can be made. In the field these J & L seamless mill features mean longer life of rubbers on swabbing jobs and full theoretical clearance where strings are telescoped, and prevent loss of time from jarring on bits flush to gauge.



Full development of cross-section during manufacture of J & L Seamless: 1. Solid round; 2. After first piercing; 3. After second piercing; 4. After plug mill operation; 5. After reeling; 6. Finished product after sizing.



JONES & LAUGHLIN STEEL CORPORATION

AMERICAN IRON AND STEEL WORKS

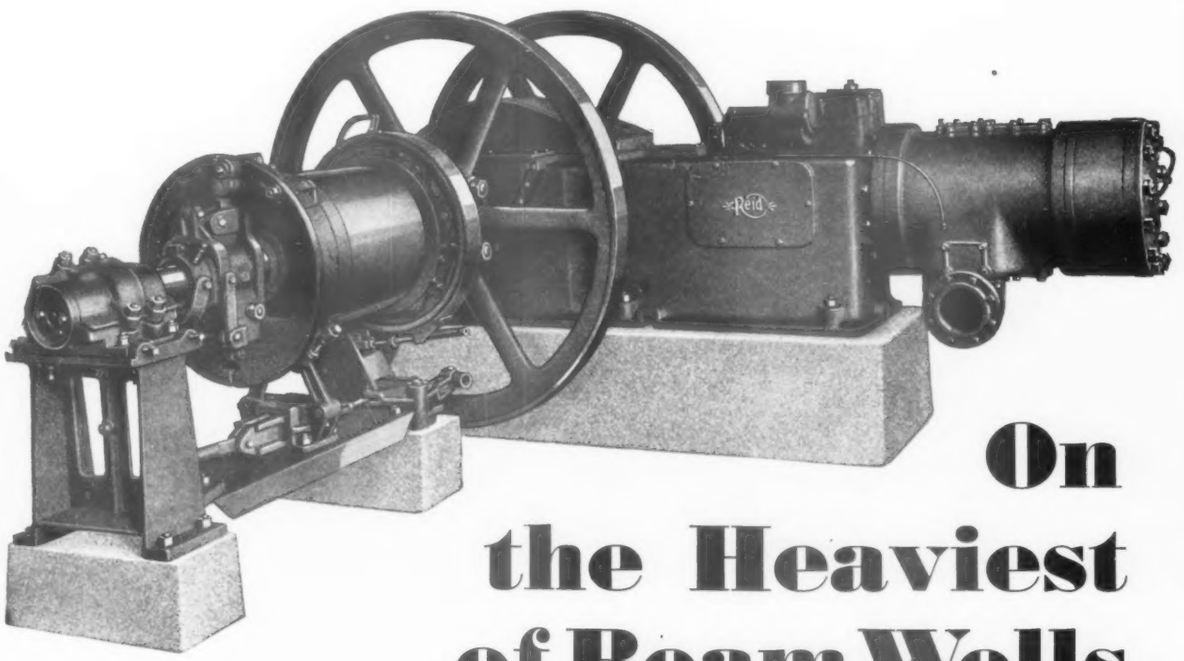
J&L STEEL

Manufacturers of Seamless and Welded Casing, Tubing, Drill Pipe and Line Pipe, and Welded Steam, Gas and Water Pipe in both Black and Galvanized.

Also makers of Bars, Shapes and Plates, Reinforcing Bars, Cold Finished Steel, Junior Beams, Steel Piling, Fabricated Structural Work, Steel Barges, Wire Products and Tin Mill Products.

JONES & LAUGHLIN BUILDING, PITTSBURGH, PENNSYLVANIA

Reid
TRADE MARK REGISTERED



On the Heaviest of Beam Wells

40 H.P. Type C Gas Engine with No. 55 Reverse Rig

This engine is built in three sizes: 35 H.P. — 40 H.P. 45 H.P.

Reid Type C Engines equipped with No. 55 Heavy Duty Reverse Rigs have proven their ability to stand the strain of oil-field service. Coupled with inherent Reid quality, they offer flexibility of operation, a wide speed range, and abundant power at all speeds safely transmitted through a sturdy reverse rig. These features enable Type C engines to ride through tough jobs of heavy pumping loads or long hard pulls like a duck through water.

And—they do it at a maintenance cost so low that the unit of Engine and Rig is one of the most economical for beam well pumping.

To get further information write for Catalog No. 37-A.

JOSEPH REID GAS ENGINE COMPANY

OIL CITY, PENNSYLVANIA, U. S. A.

BRANCHES—Marietta, Newark, and Logan, Ohio; Charleston, W. Va.; S. R. Shoup, 724 Board of Trade Building, Los Angeles, California.

EXPORT SALES REPRESENTATIVE—Oil Field Equipment Co., Inc., 30 Church Street, New York City.

DISTRIBUTORS—Frick-Reid Supply Corp., Pittsburgh, Pa., and Tulsa, Oklahoma, Distributors for Bradford and Pittsburgh, Pa., Muskegon and Mt. Pleasant, Mich., Kentucky, Oklahoma, Kansas, Texas, Arkansas, Louisiana, and Wyoming; R. B. Moore, Bolivar, N. Y.; distributed in California by The Republic Supply Co. of California, Los Angeles, Calif.

Occupying key positions throughout South Texas and Louisiana Word Supply Company stores are located so that Wickwire Spencer Rope can be placed on your job quickly.

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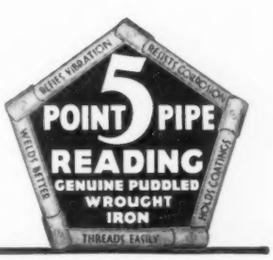

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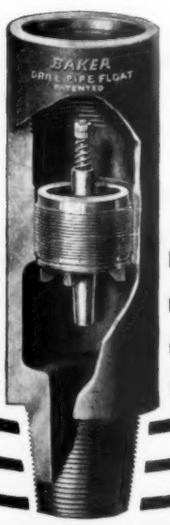

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SPENCER W. ROBINSON, EDITOR

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Volume 57, No. 10 *May 23, 1930*

The OIL WEEKLY

A GULF PUBLISHING COMPANY PUBLICATION

Extent and Value of German Petroleum Deposits Unknown

By ROY E. LEIGH
Associate Editor

ONE of the bases of the recent flare-up of interest in German oil operations is found in the completion by Anton Raky, inventor of the drilling process which bears his name, of a flowing well located in close proximity to the Oelheim field, a small depleted shallow field known as the second oldest oil field in Germany, having been opened in August, 1862. The exact depth of the Raky well is not revealed; but it is generally reported as approximating 3575 to 3600 feet. Its initial production is usually quoted as around 700 barrels per day, although one witness testifies to having seen it flow at the rate of 500 barrels per hour, when first opened up.

Another point of interest is the entry into Germany of an American group, operating through German subsidiaries of the newly-organized North European Oil Corporation, which is financed by American capital and managed by American talent. The company is headed by Chester Naramore, formerly chief of the petroleum division of the United States Bureau of Mines and American representative at the Inter-Allied Petroleum Conference, who was also associated with the Sinclair Consolidated Oil Corporation in connection with its explorations in Africa. It is sponsored by the financial house of Pettigrew & Meyer, of New York; and includes in its directorate Dr. A. C. Veatch, consulting geologist, Roderic Crandall, consulting petroleum engineer, J. W. Campbell, chairman of the Credit Clearing House, F. de C. Sullivan, president of Oil Shares, Inc., F. Y. Robertson, vice-president of American Smelting & Refining Company, and Philip W. Russell, of the law firm of Wing & Russell, all of New York.

Its operating subsidiaries own some 2,200,000 acres of land in the provinces of Hannover, Oldenburg, Macklenburg, and Braunschweig, surrounding the principal producing fields of the North German plain. One wildcat well has already been drilled; and the company expects to resume operations forthwith with a schedule of five or more test wells. The second well will be drilled on the Sottorf Dome, about 17 miles southwest of Hannover, where showings of oil have been found in earlier drillings.

Cities Service Oil Company has recently completed an investigation of German and other European oil operations, as has also, we are told, one of the European

A recent gusher in the Nienhagen field, which had an initial production of 300 to 400 barrels per day. The silvery appearance of the derrick is caused by the reflection of the sun from a surface newly wet with oil

Wietze field, Germany

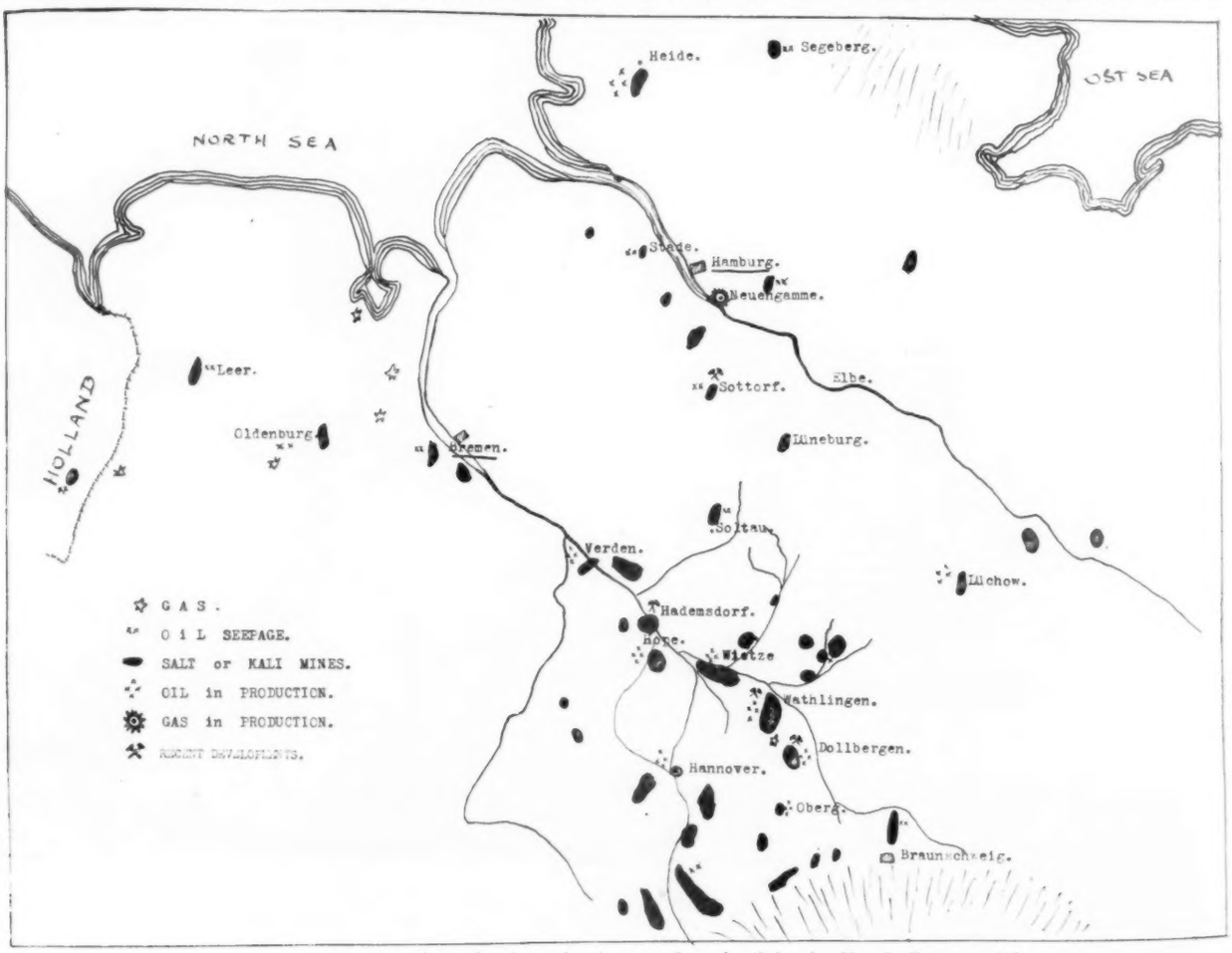
subsidiaries of Standard Oil Company of New Jersey.

Was Drake First?

We would not detract from the honor and glory that are due to Colonel Drake, universally regarded as the founder of the oil industry; but, as we contemplate the notes and impressions gained from our survey of German oil operations, we ask ourselves why it is that Drake occupies a position in history which might easily have belonged to a contemporaneous German pioneer whose name is now forgotten.

The first German oil well was drilled in the district of Wietze, then a part of the Kingdom of Hannover, during March and April of the year 1859; and thus is actually older than the discovery well of Pennsylvania. That it must have been a good well is testified by the fact that it is still productive. Who drilled this well? Why was his achievement not immortalized in the history of a people who have always ranked among the industrial leaders of the world?

If one could answer that question, he might understand why it is that the extent and value of German petroleum deposits still remain practically unknown—or, at least, the subject of uncertainty—71 years after their discovery. An American, to whom the mere phrase "salt dome" has a magic meaning, is fired with enthusiasm as he travels about the North German plain and sees scores of the same signs and indications of petroleum which led Captain Lucas and his successors to the discovery and development of the prolific salt domes of the Gulf Coast region of Texas and Louisiana. There are scores of salt domes, sour waters, sulphur springs, and seepages and exudations of oil and gas; and yet many of them have not been prospected in search for petroleum or, at best, only shallow wells have



...ndications, seepages, and production of salt, potash and oil in the North German plain

been drilled by operators who have been content with small production and meagre rewards.

Lest our enthusiasm should carry us too far, we must relate at this juncture that it is not shared by German geologists and engineers who are native to the country which we now see for the first time. While none of the German authorities who were our cordial hosts during our stay in Germany would express the thought in so many words, we nevertheless gained the impression that they contemplate the ultimate failure of many of the efforts of several American groups who are now planning or considering the commencement of operations in Germany. It is obvious that German and American calculations are based on different hypotheses; and we shall await the testing of their conflicting theories with the greatest interest.

If American hopes are fulfilled by the discovery of oil in localities and in deep sands not hitherto looked upon with favor by native operators, it will partake of the nature of a cruel joke on the Germans who made such lavish expenditures of blood and money in the conquest of Roumanian oil fields during the Great War. But, the war being over and the tomahawk safely buried, German and American engineers may now collaborate in the exploration and development of these neglected resources. Between the two groups of oil men, we are sure that the most cordial relations will prevail.

German Press Hostile

The German press, however, strikes a different note, one of hostility toward the intruding *auslanders*. German newspapers and trade journals seem to be co-operating in strafing American geologists and engineers who are now seen with increasing frequency in Northern Germany. This campaign seems to be based upon the assumption that the American interests will discriminate against German labor, engineering talent, and machinery.

The inconsistency of this attitude is painfully obvious. If the "intruders" are unsuccessful, they will leave behind them several millions of good American dollars; if they succeed, they will but add to the store of German wealth and engineering knowledge. We might add, by way of parenthesis, that the Americans may also pick up a few pointers on engineering and operating methods during their stay in Germany.

After our travels in Germany, where every contact was of a pleasant nature and every individual seemed kindly disposed and willing to go out of his way to assist a stranger, we cannot believe that these editorial expressions reflect the true attitude of the people.

If American efforts are rewarded, the German oil industry may shortly receive great impetus. At any rate, German production may be expected to continue its recent increases under the stimulus of a protective tariff which assures a profit to all who can keep their production costs below an approximate figure of $5 per barrel. German duties applicable to light

(Continued on page 78)

—Photo by A. Beeby Thompson, London.

First well drilled in Germany—still producing. This well, which is in the Wietze field, was drilled by the Royal Hanoverian Government during the period March to April, 1859, and is, therefore, older than the Drake well. F. J. G. Vingerhoets, of Brussels, Belgium, in background.

Nienhagen field, Germany

Darst Creek Field Is Monument to Accuracy of Geologic Findings

By JACK LOGAN
Staff Representative

IN the early history of the Darst Creek field, eastern Guadalupe County, South-Central Texas, one finds high honors for the science of geology. No wildcats having been drilled there, the geology of the district was mapped solely from surface indications, and the first test well of the area, based on that geological investigation, found production. Such accuracy—one wildcat, and with it an oil field—is suggestive of the uncanny precision with which production has been established in some of the Gulf Coast fields found and outlined with the aid of geophysical instruments.

The oil field which is a reality at Darst Creek today is virtually the same as that visualized through the original geological work. The surface trace of the fault along which the field is located was mapped by Dilworth Hager, now of Dallas, about the early autumn of 1928. It extended from an area south of the Guadalupe River northeastward along the present field and beyond the "Appling area," a mile northeast of the main Darst Creek field, where a group of wells are producing from the sub-surface fault.

To begin with, the Darst Creek area was recognized to have possibilities for faulting and resulting accumulation of oil by virtue of its general location. For it lies directly in that long and rather regular belt of faulting, known as the Balcones fault system, which extends through Central Texas and across a large part of the state, embracing the prolific fields of the "Luling fault zone" of South-Central Texas, and of the "Mexia-Corsicana fault zone" farther north.

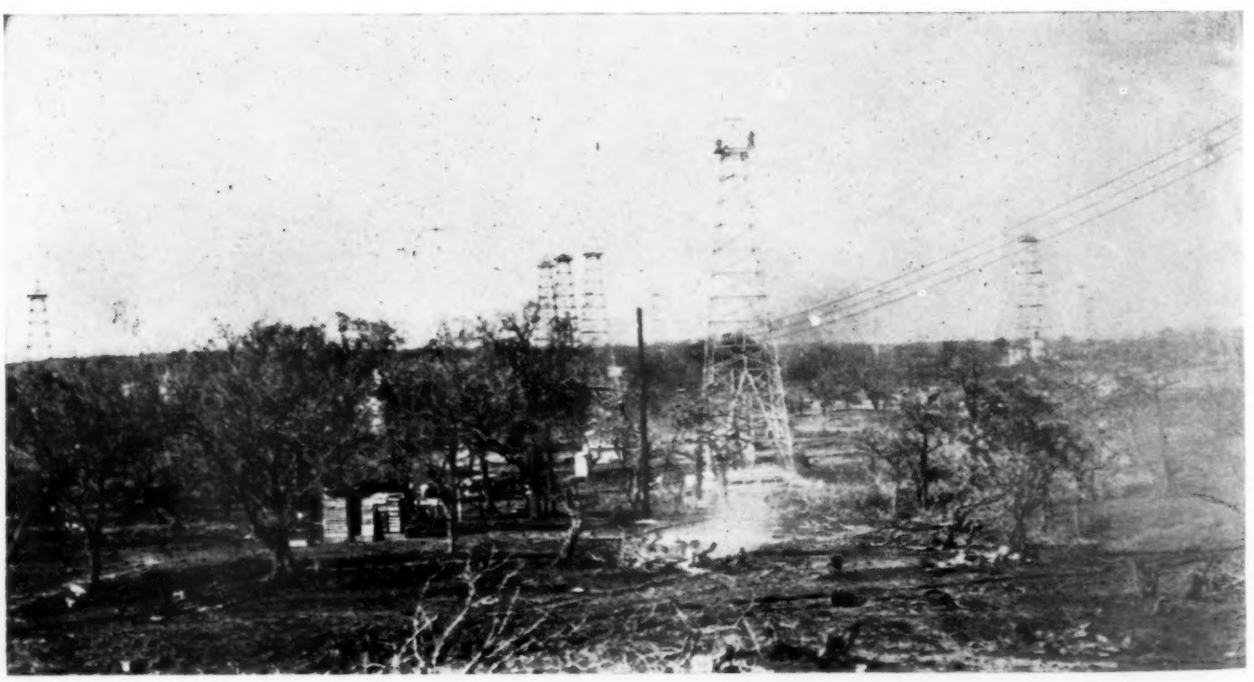
But of course, mere location in vaguely promising territory constituted no evidence of undiscovered oil. In fact, prior to the survey by Mr. Hager, with the old Luling field representing the principal producing area along the "Luling fault zone," the general impulse was to look for additional fields in line with the productive one, and many of the wildcat tests in Guadalupe and the adjoining counties were located accordingly. The Darst Creek field, however, is not in line with the Luling field. It runs parallel with Luling but is several miles farther southeast in the fault zone.

Furthermore, it should be mentioned at this point that contrary to usual assumptions, the discovery of Edwards lime production at Salt Flat, Caldwell County, approximately 15 miles northeast of Darst Creek, did not constitute the incentive for the original reconnoissance at Darst Creek, although the two fields as subsequently developed proved to be practically in line with each other. In other words, the fault at Darst Creek had been mapped, and leases covering it had been taken prior to the opening of the main Salt Flat Field on October 10, 1928, through completion of the first producer from the Edwards lime, Sun Oil Company's Mrs. Cora Malone 1.

Dipping Formations Noted

Evidence of faulting in the Darst Creek area was first noted through discovery of steeply dipping formations in what is now the south part of the field. As in other fields along the Balcones fault zone, the general direction of the fault is northeast-southwest, with the upthrow on the southeast side of the fracture. That upthrow side furnishes the trap for oil accumulation. The steeply dipping formations, referred to above, represent an effect produced on the downthrow side of the fault, resulting from the slumpage of the rocks on that side of the fracture.

While they were relatively rare, additional instances of the accelerated dips were found on the surface at Darst Creek, revealing the course of the fault.



Portion of south end of Darst Creek field, seen from warehouse of Empire Gas & Fuel Company on A. E. Dowdy lease

Dips in the Wilcox formation in south part of Darst Creek field, typical of the exposures by means of which the geology of the area was mapped

Furthermore, in at least one instance, namely along a small gulley on the Sallie Wilson farm in the south part of the present field, the geological study revealed a faulty plane—the surface of fracture, along which the rocks had slipped down. Finally, there were evidences of the necessary closure for accumulation of oil along the fault.

Following the geological survey, Mr. Hager with H. H. Weinert, Seguin banker, obtained large lease holdings, which were later sold to The Texas Company and Humble Oil & Refining Company. The leases of those two companies comprise much of the central and south part of the field, as well as acreage farther north, but valuable leases were also acquired, especially in the northern portion of the field, by United North & South Development Company, Gulf Production Company, and Magnolia Petroleum Company, as well as by some other companies and individuals.

Discovery Well Drilled

The first test well, drilled by The Texas Company, was located on the south portion of the fault, about one mile north of Darst Creek, on the Dallas Wilson 40-acre tract, Jacob C. Darst Survey. On July 18, 1929, it came in as the discovery well of the field, flowing 36.2 corrected gravity pipe line oil at the rate of 1500 barrels daily from one foot of Edwards limestone at 2610-11 feet.

Location of the discovery well had been made approximately 1000 feet northwest of the surface trace of the fault as mapped by Mr. Hager. The sub-surface fault, as shown by later drilling, is about 1000 feet farther to the northwest. The well, therefore, is about midway between the surface fault and the sub-surface fault; and incidentally, it is about in the middle of the producing zone.

The sub-surface fault runs roughly parallel with the surface trace, at a distance of 1800 to 2000 feet to the northwest, and in general, oil production is found within that intervening 2000-foot belt. In the central portion of the field, however, the productive zone is more extensive, having a width of about 3000 feet from the vicinity of Humble Oil & Refining Company's Denman lease to a point about two miles northward. In that widest portion of the field production extends approximately 1000 feet to the southeast of the surface trace of the fault.

Indication that there will be a relatively great recovery of oil at Darst Creek is revealed in the fact that there is a range of about 150 feet up and down dip on the sub-surface structure where good production is obtained. In other words, while particularly good wells are obtained in the immediate vicinity of the sub-surface fault on the upthrow side, where the producing formation, the Edwards lime, rises within less than 2000 feet of sea level, yet fair production is also obtained considerably to the southeastward, farther down on the structure, where the top of the Edwards is as much as 2150 feet below sea level. That range of 150 feet is larger than at Salt Flat or Luling, the other two major fields of the South-Central Texas producing from Edwards lime.

Well Statistics

To illustrate the above condition details will be given on several representative wells. The highest well in the field, structurally, is The Texas Company's Knoblock A-2, in the central portion of the main field. Its surface elevation is 466 feet, top of the Edwards lime is at 1994 feet sub-sea, and total depth of the well is 2511 feet. On proration gauge its potential production was rated at 1992 barrels daily.

Across the field to the southward is The Texas Company's W. R. Posey 3, which may be considered as fairly representative of good wells low on the structure. Its elevation is 481 feet, top of the Edwards is minus 2118 feet (that depth below sea level), and total depth is 2619 feet. Initial production, under proration, was 1125 barrels.

Also in the same general area is Thompson et al's W. R. Posey 1, which represents a well too far east, but still productive to some extent. Surface elevation is 464 feet, top of the Edwards is minus 2159 feet, and total depth is 2635 feet. It came in as a small producer, yielding 50 per cent water.

The above wells illustrate the dip of the producing formation in the central portion of the field, where particularly good wells have been completed. To illustrate the similar condition in the south end of the present field, two more wells will be mentioned. The Texas Company's A. E. Dowdy 1, the most southwesterly producer in the field, has surface elevation of 480 feet, top of the Edwards at minus 2115 feet, and bottom of the hole at 2626 feet. Initial production was 540 barrels. Across the field to the southeast is Humble Oil & Refining Company's Tadlock 1, with elevation of 497 feet, top of Edwards at minus 2137 feet, and total depth of 2647 feet. It came in as a small well, producing 50 per cent water.

Salt Water Level 2115 Feet

The salt water level at Darst Creek now is approximately 2115 feet sub-sea. Wells drilled below that depth, therefore, ordinarily produce water along with the oil. Wells low on structure, and consequently yielding water, include the following producers of The Texas Company: A. E. Dowdy 1, south end of the field, which encountered top of the Edwards lime at minus 2115 feet, producing 120 barrels net oil and 12 per cent water on May 1; Yates Wilson 1, also in south end of the field, top of Edwards minus 2113 feet, flowing 90 per cent water with 41 barrels net oil on the above date; Pauline Roamel 1, on the east edge of the north end of the field, top of Edwards at 2136 feet sub-sea, making 95 per cent water and 40 barrels net oil; Pauline Roamel 2, top of Edwards minus 2129 feet, 83 per cent water, 83 barrels net oil; Pauline Roamel 3, top Edwards minus 2113 feet, 12 per cent water, 120 barrels net oil. The above wells constitute all wells of The Texas Company which were yielding more than three per cent water on May 1. The discovery well, Dallas Wilson 1, was flowing 117 barrels net oil, with three per cent water. Top of the Edwards in it is 2083 feet sub-sea. In addition, the company has 19 wells yielding no water or b. s., and eight wells yielding only two per cent or less of b. s. and water. Humble Oil & Refining Company at the same time had one well which was producing 22 per cent water, but most of its producers were yielding pipe line oil. In general most of the wells in the central portion of the field are still yielding pipe line oil. Where water does occur with the oil production, it is readily treated out, usually with Tretolite.

Surface elevations of wells at Darst Creek range from 450 to 540 feet.

(Continued on page 68)

The Significance *of* Gas Oil Ratios

By RAY E. KOLLAR
Petroleum Engineer

THE accompanying discussion of "The Significance of Gas-Oil Ratios," by Ray E. Kollar, production engineer, is part of a general discussion of efficient methods of production and oil recovery by Harry Pennington and S. F. Shaw, engineer, The Carter Oil Company, which have appeared as articles in several successive issues of THE OIL WEEKLY.

In this discussion the author has a two-fold purpose, namely, to discuss certain recent investigations on the generally accepted definitions of the term gas-oil ratio, and to show the application of these data to the several articles published in THE OIL WEEKLY, *and written by Messrs. Pennington and Shaw.*

Further discussion of this subject and other subjects closely allied, is invited, and THE OIL WEEKLY *will be glad to give such discussions adequate space. Data on oil fields already developed are of value in that such information pertaining to the efficient production and recovery of oil under similar circumstances in fields now being developed or to be developed in the future, is well worth consideration.*

THE following discussion of the significance of gas oil ratios and of production efficiency is submitted with a two-fold purpose in view; first, that of bringing out the bearing of certain recent investigations on the generally accepted definition of the term "gas oil ratio." And second, the writer does not exactly subscribe to either the position taken by Mr. S. F. Shaw or that outlined by Mr. Harry Pennington in recently published articles in THE OIL WEEKLY dealing with operations in the Seminole area. These differences will become evident in the following discussion.

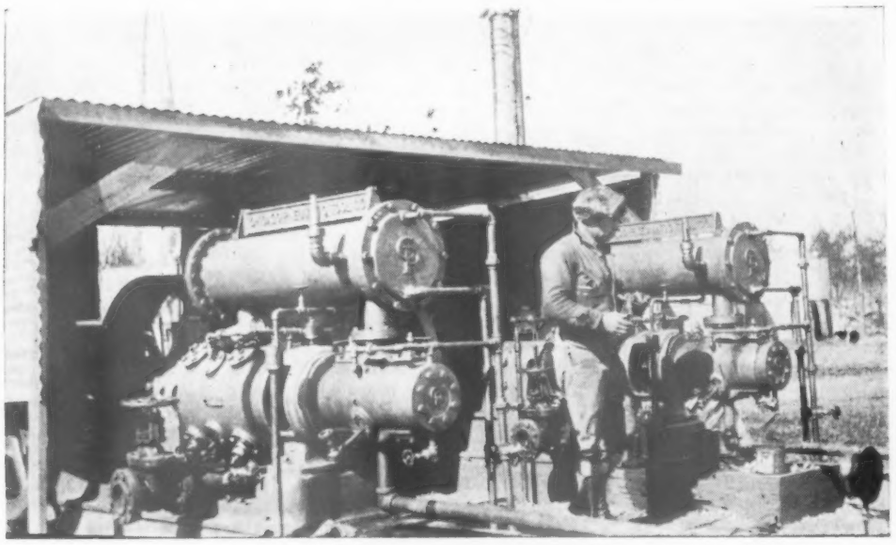
Gas-Oil Ratio

The somewhat indefinite "yardstick" "gas-oil ratio" has been and is now being used to a considerable extent as a measure of production efficiency. It is but natural that this factor should be given considerable attention in connection with the production of oil, as it is a direct indication of the utilization of the natural energy originally stored in the producing reservoir and associated with the oil. When this energy is completely dissipated in any manner, production ceases or is entirely dependent upon the effect of gravity upon the oil and encroaching water.

The term gas-oil ratio has, heretofore, been rather loosely defined as the number of cubic feet of natural gas produced from the formation, or producing sand, per barrel of oil. In a natural flowing well, it is simply the quantity of gas accompanying each barrel of oil to the surface, as measured by a meter on the gas discharge line from the separator into which the well is flowing. In the case of a well being produced on gas or air lift, the gas-oil ratio is the difference between the input gas factor and the output gas factor, per barrel of oil.

Recent investigations made and data assembled by the writer indicate that this term needs to be re-defined, as the number of cubic feet of *fixed gas* accompanying each barrel of oil from the producing sand. While, at first consideration, the change in this definition indicated above will seem to be minor and of small significance, data will be submitted later showing that as high as 20 to 40 per cent by volume of the natural gas produced by wells in the Seminole area is made up of gasoline fractions and hydrocarbons which, under the pressure conditions obtaining in the producing sand, are in a liquid state. In other words, only about 60 to 80 per cent of the indicated metered gas oil ratio is a true *fixed gas,* capable of doing actual work through expansion in accordance with Boyle's law, thus carrying oil through the producing sand into the well bore and lifting or aiding in the process of lifting this oil to the surface. For the purposes of this discussion, the term *fixed gas* will be used only to include methane and ethane. These two fractions more closely approximate a perfect gas than do any of the others. The lower hydrocarbons, such as propane, butane, and pentane, under certain low bottom hole pressure conditions, are capable of performing some work in bringing oil into the hole. Under higher pressures, they are in a liquid state and must, themselves, be moved through the sand to the well by the fixed gases. In the process of lifting oil to the ground surface after it has reached the well from the sand, propane is capable of performing some work. If definite information were available as to the pressure conditions obtaining at different points in the eductor column or tube, the actual work performed by these different fractions would be readily ascertainable from the knowledge already at hand as to their critical and vapor pressures. However, the work performed by these fractions after distilling may not compensate for the energy previously expended by the associated fixed gas in bringing them through the sand into the well and up the eductor tube to the point at which the pressure and temperature conditions are such that they will distill. On the whole, the work performed by these fractions may in most instances be considered negligible. Yet, heretofore, these fractions have been measured and included in the gas-oil ratios and given credit for performing every function a true fixed gas would perform in bringing oil into the well from the producing sand and in lifting this oil to the surface of the ground.

In "Function of Natural Gas in the Production of Oil," a report of the United States Bureau of Mines in cooperation with the American Petroleum Institute, 1929, H. C. Miller states: "Since reservoir pressure in many oil fields is well above the critical pressure of some of the constituents of natural gas, it is certain that some hydrocarbons that are gases at atmospheric pressure and temperature are liquids in the reservoir. Natural gas is a mixture of methane and heavier hydrocarbons, some of which liquefy at the pressures found in oil structures. Above their critical temperature, however, gases cannot be liquefied by pressure. Methane, for instance, could not be liquefied by any pressure in a well because the temperature in wells is never as low as its critical temperature, and ethane can be liquefied only where t



When the rush was on at Seminole

temperature is below 95° F. All other gases in natural gas may easily exist as liquids in reservoir formations."

In the report mentioned above, Mr. Miller further states, "As has been shown, work is necessary to move oil against the combined effects of frictional resistance of reservoir formation material, viscosity of oil, and gas-bubble resistance. Since the principal source of energy to perform this work is the expansion of the gas that accompanies the oil, the amount of gas produced with a barrel of oil has come to be considered as a measure of the amount of work being done underground; the efficiency of wells and properties, therefore, are being compared on the basis of their gas-oil ratios or quantities of gas produced per barrel of oil. Such a comparison is fair only so long as the reservoir pressure conditions are the same, since the amount of work done varies not simply with the quantity of gas, but as the product of this quantity and the reduction in pressure; or by the number of times the gas has expanded in passing from the formation pressure to its final pressure where it discharges its load of oil into the casing."

The writer maintains that, furthermore, such a comparison of the efficiency of wells or properties is fair only when the term gas-oil ratio has been reduced to some common denominator, such as the *fixed gas* content thereof. Considerable thought and study has been devoted to the action of natural gas and mixtures of natural gas and oil in capillary tubes and in sand bodies; due cognizance has also been taken of the natural gasoline content of this gas after it has reached the surface of the ground and has been separated from the oil. In connection with the study of gas-oil ratios, however, the fact has not been brought out that a high percentage of this metered gas-oil ratio, in the case of a high gravity oil especially, is made up of hydrocarbons which are in a liquid state in the sand, and due to their low critical pressures, do not perform work in bringing oil into the well from the sand. It is believed that a proper recognition of the significance of this factor in gas oil ratios will necessarily lead to a revision of many conclusions which have been based on a study of this subject in connection with the production of oil. The importance of this consideration becomes at once apparent when it is realized that a given measured quantity of gas may be capable of performing as much as 20 to 40 per cent less work than it has been given credit for performing. The case in point will be illustrated, later in this discussion, by an example taken from actual practice.

Analysis of Natural Gas

For some time past, the natural gasoline industry has availed itself of information secured through fractional distillation analysis of natural gas, natural gasoline and plant products at different stages in the manufacture of natural gasoline. In this manner, plant efficiencies and operations are checked and controlled. By use of the Podbielniak Apparatus,[1] information may be had as to the exact percentages of methane, ethane, propane, butane, pentane, etc., present in any given sample of natural gas. To the writer's knowledge, this information has not heretofore been applied in connection with the matter of securing a clearer conception of the meaning of gas-oil ratios. Yet there is much valuable data available from this source. The attention which is being given to gas-oil ratios and the importance being attached thereto, certainly warrant a clearer conception of the true significance of this term. If gas-oil ratios are to be used as a "yardstick" for measuring production efficiency; if, as is already being done in California, gas-oil ratios are to be the deciding factor in allowing certain wells and petroleum bearing areas to produce oil or not produce oil or if the gas-oil ratio to be the factor which will decide the allowable production in certain areas, then certainly this term should be clearly and distinctly defined.

This need will become immediately apparent when one realizes the wide

[1] "Fractional Distillation Analysis . . . Its Practical Application in the Manufacture of Natural Gasoline and in the Refining of Petroleum," by Walter J. Podbielniak, published in the Refiner and Natural Casoline Manufacturer, March, 1929.

TABLE NO. 1

	Critical Temperatures and Pressures of Various Hydrocarbon Gases*		Vapor Pressures of Various Hydrocarbon Gases at Temperatures Indicated† Pounds per Sq. Inch.		
	Critical Temp-pressures degrees F.	Critical press. pounds per sq. in.	60°	80°	100°
Methane . .	—139.0	736.5	....	....	....
Ethane . . .	95.0	665.8	590.0	680.0	775.0
Propane . . .	206.6	662.8	107.0	136.0	175.0
Butane . . .	307.4	522.0	26.0	36.0	50.0
Pentane . .	387.0	486.6	7.0	10.5	15.5
Hexane . . .	454.1	441.9	....	....	....
Heptane . .	512.3	394.8	....	....	....
Octane . . .	565.5	371.2	....	....	....

*Day, David T., Handbook of the Petroleum Industry: Vol. 1, John Wiley & Sons, Inc., 1922, p. 730.

†Data from Chart by Engineering Research and Equipment Company, Los Angeles and Dallas.

differences which may creep into this factor, between an area producing low gravity oil and one producing high gravity oil. The gas associated with low gravity oil will be found to be practically all *fixed gas*, methane and ethane; that is, it will be found to more nearly approximate a perfect gas capable of expanding and performing work. In high gravity oil areas, the gas produced with the oil will be found to contain a high percentage of the lower hydrocarbons which are in a liquid state until a greatly reduced pressure condition obtains on the mixture. These fractions will, however, be metered from the separator as a portion of the gas-oil ratio. Inasmuch as they do not even approximate the condition of a perfect gas, it is manifestly unfair to use the indicated gas-oil ratios as criteria for directly comparing the production efficiencies of the two areas.

In connection with the above, the following fractional distillation analyses of two samples of output gas from different producing wells are submitted:

The difference between the two gases is striking. In the case of Well No. 1, the gravity of the oil produced was 41° A. P. I.; the gravity of the oil from Well No. 2 was about 30°, A. P. I. Both wells were flowing naturally. The gas from Well No. 1 contains only 58.6 per cent methane and ethane; the remainder, 41.4 per cent, then, is made up of propane and lower hydrocarbons which, as mentioned before, do not approach the condition of a perfect gas. In the case of Well No. 2, 95.9 per cent of the total is methane and ethane, leaving but 4.1 per cent of the lower fractions. The difference in the amount of work that will be performed by the two gases under identical pressure conditions, in bringing oil through the producing sand into the well and in lifting this oil to the surface becomes at once apparent.

The following table gives the fractional distillation analyses on three gas samples taken from producing wells in the Seminole area:

TABLE NO. 2

Percentages by Volume

Well No.	Methane	Ethane	Propane	Butane	Petane	Hexane Plus
1	47.5	11.1	18.2	14.0	5.4	3.7
2	90.4	5.5	4.1	...	...	...

TABLE NO. 3

	Well No. 1 Per Cent	Well No. 2 Per Cent	Well No. 3 Per Cent
Methane	44.0	47.5	42.7
Ethane	14.7	11.1	14.5
Propane	24.2	18.2	24.7
Iso-Butane	3.7	2.6	2.3
N. Butane	7.8	11.4	9.4
Pentanes Plus	5.6	9.1	6.4

The samples in the cases of Wells No. 1 and 3 were from wells being produced by the gas lift method; in the case of Well No. 2, the gas sample was from a natural flowing well. Other high percentage of propane and lower hydrocarbons in the output gas from wells producing from the Wilcox sand in the Seminole area.

Bearing in mind the information outlined above in Tables No. 1 and No. 2, the following data are submitted on two wells producing under radically different conditions:

TABLE NO. 4

Well	Prod. Bbl. Per Day	Bottom Hole Press. Pounds	Input Gas Cu. Ft. Per. Bbl.	Output Gas Cu. Ft. Per Bbl.	Gas-oil Ratio	Lift'g Efficiency	Lift'g Eff. Based on Fixed Gases	Gas Oil Ratio Based on Fx Gas
A	710	810	Flowing	Naturally	510	10.7	10.7	510
B	624	122	1143	1528	385	16.1	19.1	317

In the case of Well A, the data is quoted from an article by Harry Pennington in the March 7 issue of THE OIL WEEKLY, entitled "Losses Occurring from Disregard of Gas Proportions at Seminole." Mr. Pennington states, in connection with the conditions under which this well was producing, "Selecting a well at random; 3220 feet to the top of the oil bearing formation and 3540 feet to the bottom of the same, with a 2½-inch constant diameter flow line, with an interior diameter of 2.323 inside of 6⅝-inch casing with a ⅜-inch orifice or choke at the surface. Pressure in the casing at the surface is 810 pounds; pressure in the flow line at the surface, inside of choke, 260 pounds. The daily production is 710 barrels of oil of 31 Be. and the gas produced per barrel, 510 cubic feet."

Well B was producing through a somewhat larger sized tubing on gas lift from the Wilcox sand in the Seminole area, from a total depth of approximately 4400 feet. The pressure on the separator into which the well was producing, was approximately atmospheric. The well would not flow naturally under any conditions.

The lifting efficiencies in both cases, are, of course, calculated on the basis of total gas output per barrel of oil, which in the case of the gas lift well, includes the input gas factor, or the gas supplied to the well by the compressors. Under the pressure conditions obtaining in the case of Well A, the propane present would practically all be in the gaseous state. Therefore, for purposes of comparison, the *fixed gas* in these two cases will be considered as made up of methane, ethane and propane. Available data indicate that in the case of Well A, producing 31 gravity oil, the associated gas would be practically 100 per cent methane, ethane and propane. Fractional distillation analysis of the output gas from Well B revealed this gas to contain 82 per cent by volume of these fractions.

While the producing conditions of these two wells differ radically, there is unquestionably a better utilization of available energy in the case of Well B. Two fundamental advantages in the method of producing the Seminole well over the other well are at once apparent, as follows:

First. The lifting efficiency in the Seminole well is almost double that of the other. This means that the energy supplied at the bottom of the eductor tube, is utilized to much better advantage in the case of well B. In a flowing well it is, of course, immaterial so far as performance is concerned, whether this energy is furnished by the producing formation only or whether it is furnished by both the producing sand and an outside source, such as the compressors which supply the additional gas required to cause the well to flow. The more advantageous use of this energy may be due to tubing design, discharge pressures against which the well may be flowing and other factors. Well B was producing, as outlined above, against practically atmospheric pressure. This means that all of the energy expended by the gas in expanding from its original pressure condition to its final condition was used in performing work in connection with lifting oil to the surface. In the case of Well A, the gas expanded from 810 pounds down to 260 pounds in the process of lifting the oil. Expansion between these original and final pressure conditions means that the gas gave up 2350 foot-pounds of work per cubic foot in the process of lifting oil. However, it further means that 6199 foot-pounds of work per cubic foot of gas were dissipated when the gas expanded from 2

pounds down to atmospheric pressure, after the oil had been lifted. In other words, only 27.3 per cent of the original energy in the gas was used in actually lifting the oil to the surface of the ground. The remainder, or 72.7 per cent of this energy was wasted so far as lifting oil is concerned.

Second. The gas-oil ratio is approximately 38 per cent lower in the case of the Seminole well. This item needs no further discussion here. Further data will be given later to show that gas-oil ratios in the Seminole area compare very favorably with those obtained elsewhere.

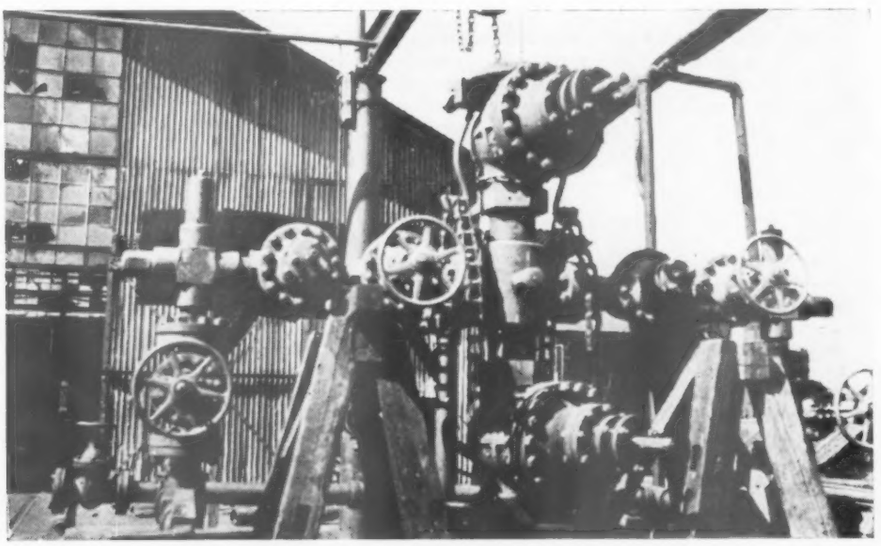
From a practical standpoint, a knowledge of the properties and consequent behavior of different gases in very important. In one instance in the Seminole area, a drop in production of 210 barrels of oil per day was noted in a well after an apparently minor change had been made in the gas supply to the well for lift purposes. With the compressors which were flowing the well, handling residue gas from an absorption gasoline plant, a production of 1240 barrels of oil per day was secured. With compressors of practically the same capacity on the well, but handling a mixture of recycle gas and vapors from gasoline stock tanks, without after-coolers on the input line to the well, a production of but 1030 barrels of oil was obtained. In the first case, the gas flowing the well was made up principally of methane and ethane; in the second case, a comparatively high percentage of propane, butane, etc., was present in the input gas to the well. Measurements of the output gas from the well showed a somewhat greater gas factor in the second case than in the first, which would indicate that sufficient gas for lifting the normal oil production of the well was being supplied. Furthermore, when the mixture of recycle gas and gasoline stock tank vapors from the same two compressors was put through a condenser on the input gas line to the well, through which a large amount of the propane, butane and lower fractions were removed, an increase of 95 barrels of oil per day was noted in the production from the well. The production increased from 1030 barrels per day to 1125 barrels per day. This shows clearly that the propane and lower hydrocarbons were not performing work in lifting oil; it also shows clearly that some of the energy in the fixed gas, which might have been utilized in lifting more oil, was being consumed in lifting these fractions at least to a point where the reduced pressure would allow them to distill. The above outlined data proved conclusively that for equal volumes of the two different gases, under similar pressure and operating conditions, considerably less work was performed in the second case than in the first. The same principles operate in natural reservoirs in which natural gas and oil have accumulated. Five hundred cubic feet of gas which is made up almost entirely of methane and ethane with possibly a small percentage of propane, will deliver considerably more work in bringing oil into the well through and from the producing sand and in lifting this oil to the surface than will the same amount of a gas which contains a high percentage of propane and the lower hydrocarbons.

[2]The Oil Weekly, March 7, 1930, page 29.
[3]The Oil Weekly, February 7, 1930, page 31.

Conditions in the Seminole Area

Harry Pennington has stated [2]"—it is evident that the amount of gas produced per barrel of oil, even in the later stages of Seminole was ample (to flow these wells) without the use of compressed gas on a wholesale scale." He also previously suggested that formation gas in the Seminole area was of "such large volume and of such high pressure that its contained energy was far greater than that necessary for elevating the whole oil content to the ground surface." His conclusions in this respect are based upon calculations made using an operating bottom hole pressure of 1200 pounds per square inch. S. F. Shaw has stated, [3]"Initial pressures in the Seminole field, judging from the pressures required to start a large number of wells, were somewhere between 1000 and 1200 pounds per square inch, and perhaps the assumption of 1200 pounds as the initial pressure over the field is as close as can be made." Mr. Shaw also states that the average gas-oil ratio for one operator in the Seminole field has been 705 cubic feet per barrel.

In connection with the above statements, it might be mentioned that the writer has determined numerous bottom hole pressures on *producing* wells on gas lift in the Seminole area, not only by calculating the friction loss through the tubing in the well through which the input gas is supplied, but by other methods. The highest operating bottom hole pressure encountered to date was about 450 pounds per square inch in the case of a well making about 7500 barrels of oil per day. Yet this well would not flow naturally; it was

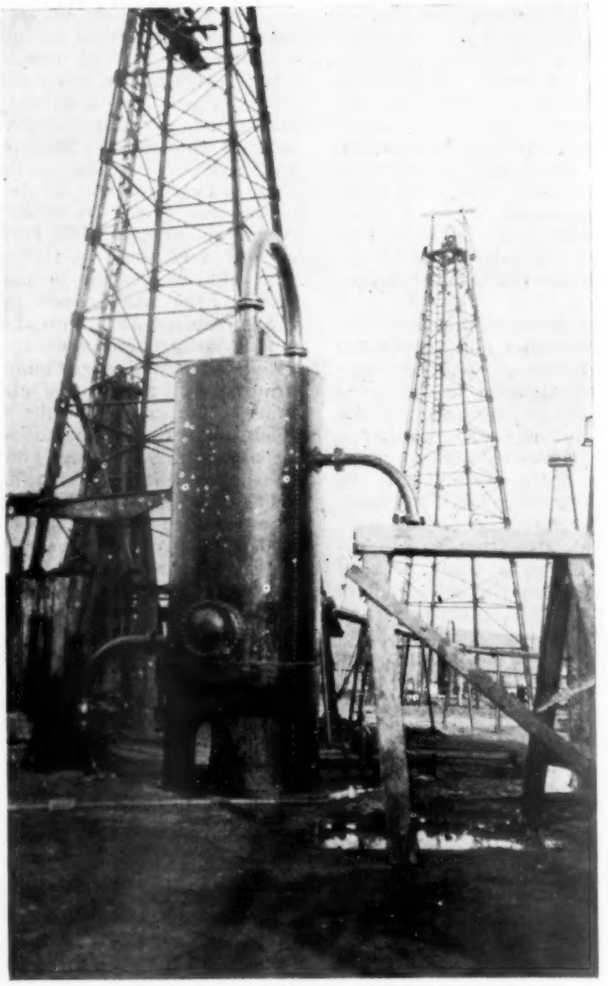


High pressure Christmas tree of inside derrick type—a simplified form as used on gas lift in Roumania

produced on gas lift with a lifting efficiency of about 17 per cent. In no single instance has an operating bottom hole pressure of 1000 or 1200 pounds even been approximated. In general, depending of course, upon the production of oil, these pressures for this area range from 35 to 300 pounds per square inch.

Information is at hand on operations in the Seminole field covering wells producing from as low as 80 barrels per day to as high as 7500 barrels per day on gas lift with lifting efficiencies ranging from 5.8 per cent to as high as 32.5 per cent. This covers the producing range through graduated tubing strings, four-inch tubing, and through the annular space between the tubing used for input gas purposes and the casing. An example of particular interest might be cited. On one well, 4200 feet in depth, flowing naturally through the casing at the rate of approximately 5000 barrels of oil per day, the measured gas-oil ratio was 850 cubic feet per barrel. A fractional analysis of the output gas from the well showed but 58.6 per cent of this gas to be *fixed gas*, that is, methane and ethane. In other words, the actual gas-oil ratio, or gas capable of doing work in bringing oil into the well from the sand and in lifting this oil to the surface, was only about 500 cubic feet per barrel of oil. Information available from tests previously run on this well when it was on gas lift, making approximately the same production, indicates that the pressure obtaining at the bottom was probably about 250 pounds. These figures show a lifting efficiency of 32.5 per cent. No information is at hand as to figures elsewhere that approximate the data outlined. The above, however, is an outstanding example of performance in the Seminole field. The well mentioned was producing in a district where the sand condition is probably the most porous and loose that has been encountered in the area. Other examples might be mentioned, though, of wells producing on gas lift with lifting efficiencies as high as 18 to 20 per cent, assuming isothermal expansion, through a 6⅝-inch oil string with 2½-inch tubing for input gas purposes. These latter efficiencies are based on metered gas-oil ratios, with no allowance made for the percentage of lower hydrocarbons in the output gas from the well.

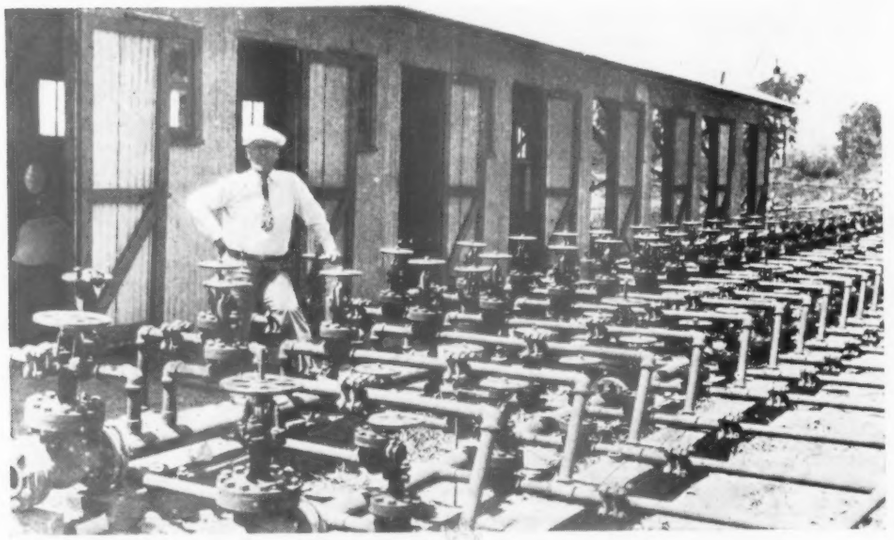
The above data outlines performances which have actually been secured in connection with the commercial operation of wells in the Seminole area. They are, however, a reflection of the behavior of comparatively large producers, wells therefore, having a relatively high bottom hole pressure. Wells of from 4000 to 4500 feet in depth have been produced commercially and profitably in this field down to as low as 100 barrels per day on straight or continuous gas lift. The bottom hole pressures obtaining in these cases are unexpectedly low; in some instances the gas oil ratios, due to the age of the wells and the relatively high gasification of the oil in the lifting process, are rather high. The oil, however, produced from these and in fact, most gas lift wells is stabilized to an extent that there is a comparatively small loss in transit from the producing lease to the refinery.



Separator installation in Roumania. In installation, every effort is made to reduce friction

S. F. Shaw has stated[3] that the average gas-oil ratio for one company during the three years from 1927 to 1929, inclusive, was 705 cubic feet per barrel. While the data available from input and output meters measuring the gas factors may have indicated such a figure, the writer cannot agree that this is the figure which should be considered as the actual gas-oil ratio. It is entirely too high. Fractional distillation analyses of output gas from a number of these wells, as outlined previously, show that it contains only from 60 to 80 per cent fixed gas. This will materially reduce the number of cubic feet of gas actually capable of performing work through expansion in accordance with Boyle's law. In support of this position, we find that the records show approximately 5.6 gallons of raw or unstabilized gasoline were recovered per barrel of oil. This figure does not, of course, include the wastage from gasoline stock tanks through weathering. Although a pressure of about 25 pounds is carried on these stock tanks, a constant stream of gas due to weathering can be seen escaping from the relief risers. Especially is this true of the gasoline produced at compression plants. This wastage will probaby bring the average figure up to six gallons or more of raw gasoline taken out of the output gas from the wells per barrel of oil produced. Of the hydrocarbons which go to make up raw gasoline, probably an average of about 40 cubic feet in the gaseous state are required to produce one gallon of gasoline. This factor, which bears out the fractional distillation analyses of the output gas, accounts for about 240 cubic feet of the indicated gas-oil ratio. In other words, it brings the average gas-oil ratio mentioned by Mr. Shaw down to 465 cubic feet per barrel of oil.

This figure, 465 cubic feet of gas per barrel of oil, in some instances during flush stages, has been sufficient to



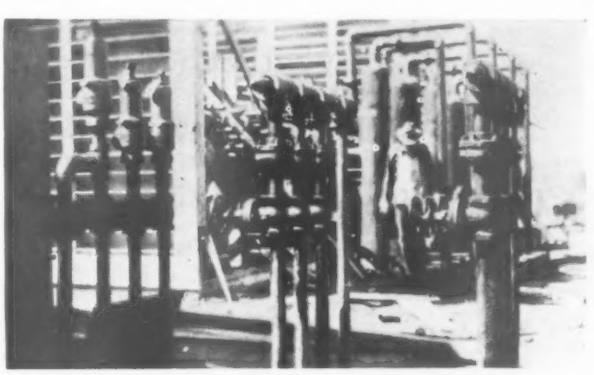
A large header system for the gas lift operation of an entire lease

cause wells to flow. Wells have been observed producing under natural flow with gas-oil ratios as low as 474 cubic feet per barrel. Exact information was not at hand at that time as to the fixed gas content of the output gas from the wells, but in the light of later information, these wells were probably producing with a *fixed* gas-oil ratio of less than 300 cubic feet per barrel, from a depth of a little more than 4000 feet. On the whole, however, under the low operating bottom hole pressures obtaining in this area, the gas associated with the oil originally in the sand has been entirely inadequate to cause the wells to flow. This statement is borne out by what actually occurred. A comparatively small percentage of the wells completed in the Seminole area have flowed naturally, and in these cases natural flow was sustained over only a comparatively short period of time.

Mr. Shaw has pointed out that one company operating in that area has had a recovery of over 50 per cent to date, or an average of something over 22,000 barrels of oil per acre, assuming a thickness of productive sand of twenty-five feet, drainage area 10 acres per well, porosity 22½ per cent, saturation 100 per cent, with a probable 10 to 20 per cent that will yet be recovered.[3] In addition to the above oil recovery, approximately 3000 barrels of natural gasoline were recovered per acre. The writer knows of no other area where anything close to the above recovery has been obtained. In this connection, it might be stated that approximately 70 per cent of the above oil recovery was secured by the gas lift method, part of the gasoline having been recovered at gasoline plants through the absorption method and part at gas lift stations by the use of after-coolers or heat exchangers on the input gas lines to the producing wells.

From the facts outlined in the above discussion, it is thus readily seen that there was not sufficient fixed gas associated with the oil, under the pressure conditions obtaining in most cases, to flow these wells naturally; much less was its "contained energy far greater than that necessary for elevating the whole oil content to the ground surface," as Mr. Pennington contends. Bearing in mind the stripping and stabilizing effect of the output gas on the oil, together with the comparatively low operating bottom hole pressures, it will be seen that both the energy originally associated with the oil in the formation gas and also the energy supplied by compressors in the process of lifting the oil has been utilized to excellent advantage in producing oil in the Seminole area.

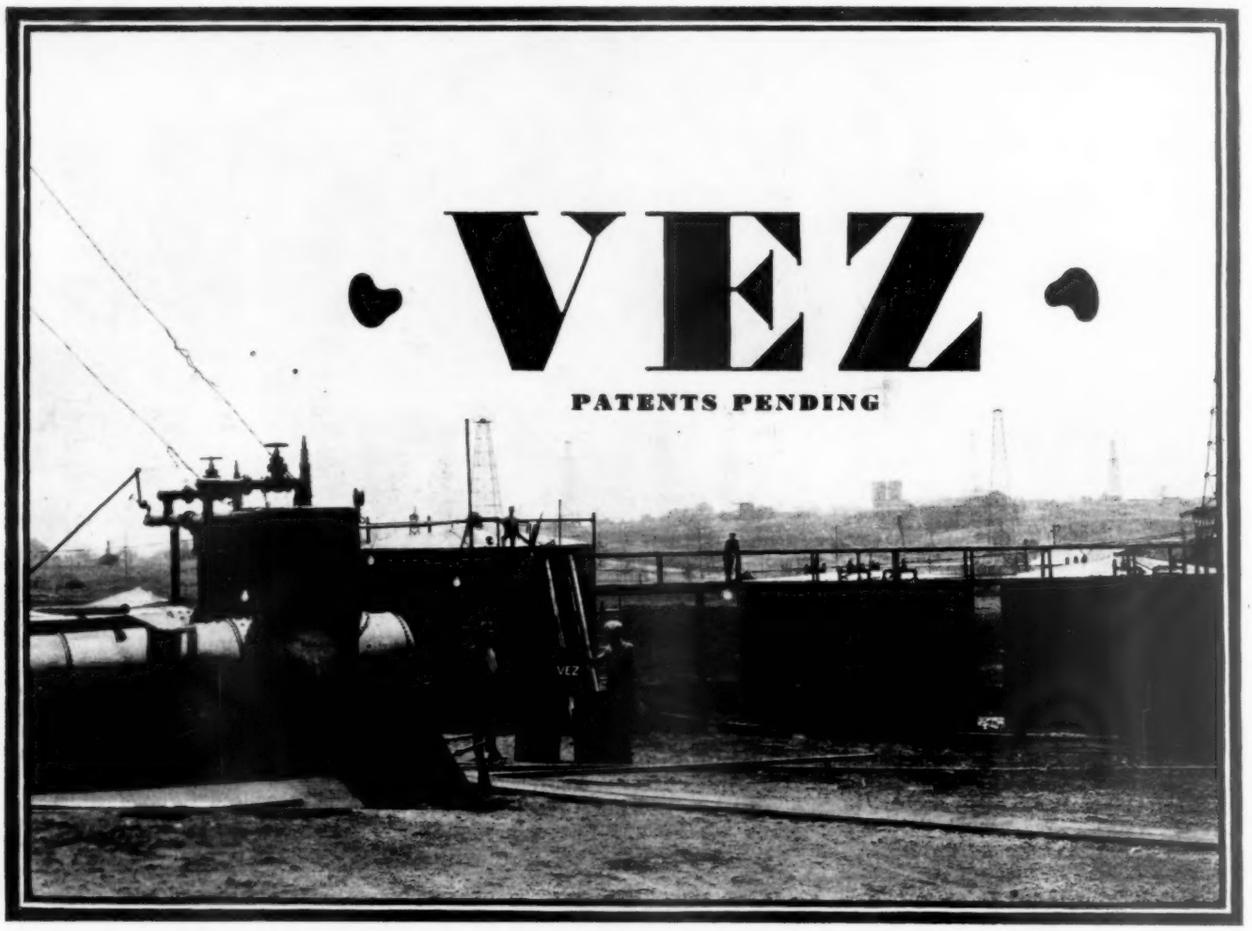
The data submitted above have all more or less been based upon the condition of producing the properties referred to at approximately their most efficient rate. As has already been pointed out by Mr. Shaw, this policy has resulted in an estimated recovery to date of something over 50 per cent.



Manifold on Seminole pressure system

The practice of applying back pressure to producing wells with a view to deferring production has been advocated. This has not proven feasible in connection with these properties. In one instance in the Seminole field, a well was connected in such a manner that it could be produced through either the tubing or the annular space between the tubing and the casing. A recovery of 2976 barrels of oil per day was secured when the well was produced through the annular space, while the best production obtainable through the tubing was only 276 barrels per day. These data were secured in connection with the operation of producing wells during proration periods. Unquestionably, these figures represent a prohibitive penalty in "deferred production" through the application of back pressure on the producing sand. There is already some evidence at hand, secured during proration periods, which would indicate that a part of this deferred production at least may not be recovered in the later stages of the producing life of the field.

The foregoing analysis shows a remarkably high percentage recovery in the Seminole area to date; the data submitted on *fixed* gas-oil ratios show this recovery to have been obtained with a remarkably low average gas-oil ratio; it has been further shown that the energy originally associated with the oil in the sand and the energy supplied by compressors has been utilized very efficiently in lifting the oil. On the whole, it is believed that the producing method employed was well adapted to the conditions obtaining in the Seminole area.



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New Mexico Forcing More West Texas Restriction

By H. H. KING
Staff Representative

FORT WORTH, Texas.—An unstable crude market situation is putting in its appearance in a number of interior fields of Texas, with the western portion of the state already showing signs of impending competition that is to come from New Mexico. Sidestepping of West Texas sulphur contaminated crudes for New Mexico, 36 gravity oil, containing a smaller sulphur content, b several major crude purchasing companies became known during the week when operators in Yates and Howard-Glasscock County prorated areas met here to hold back production in their respective fields to a lower figure than authorized by proration rules.

The Hobbs field is rated as a major source of crude that probably can not be restricted by customary proration plans, owing to the New Mexico authorities desiring to realize on royalties. The stage is all set for the removal of the lid on the Hobbs field after waiting more than a year for a pipe line outlet. Fifty or more tests are assured for the field while pipe line capacity is expected to be swelled to 100,000 barrels daily before the close of 1930. Humble Pipe Line Company recently put an eight-inch line in operation, while Atlantic Pipe Line Company is starting a similar line. Other lines slated for the field are likely to be built from Texas by Pasotex Pipe Line Company, Shell Pipe Line Company, The Texas Pipe Line Company and possibly Gulf Pipe Line Company.

Texas Line Law

Interstate movement of New Mexico crude by these lines will not be affected by the new Texas pipe line law, effective June 20. Invasion of New Mexico with lines from West Texas points appears to have been stimulated since the passing of the new pipe line law last March.

In the Yates field the Texas Railroad Commission's production quota is fixed at a maximum of 130,000 barrels daily, provided pipe line companies take the oil as produced and no field storage is used, but the combined market outlet now available is only 110,000 barrels daily, and the field is to be held to the latter level until the close of June. A companion situation prevails in the prorated wells comprising the Howard-Glasscock County district as the commission grants the operators a maximum output of 37,500 barrels daily, but the market outlet has lately declined to 24,000 barrels daily, and is threatened with an even smaller market quota next month.

Efforts of crude purchasing companies in the Yates field, led by Humble Oil & Refining Company, to curtail their runs caused the commission to order the output of the field to be reduced on March 18 from 130,000 to 110,000 barrels daily. This 20,000-barrel cut was issued for a 60-day period. Operators and crude purchasers met in Fort Worth May 16, and unanimously agreed to petition the commission to extend the temporary calling for the lower production allowance until the close of June because of crude buyers not desiring to resume their former takings from the field.

Resignation of W. A. Moncrief, Fort Worth operator, as chairman of the advisory committee of the Yates field proration organization was accepted, and the operators elected Warner Clark, manager of Texas and New Mexico operations of The California Company, to fill the vacancy. Clark has been actively identified with proration work in all three of the West Texas areas that are operating under the conservation program of the Texas Railroad Commission. Moncrief served as chairman for several years, and submitted his resignation late in 1929 when he disposed of his interests in a producing property in the field, but was persuaded to retain his position on the committee.

Howard-Glasscock

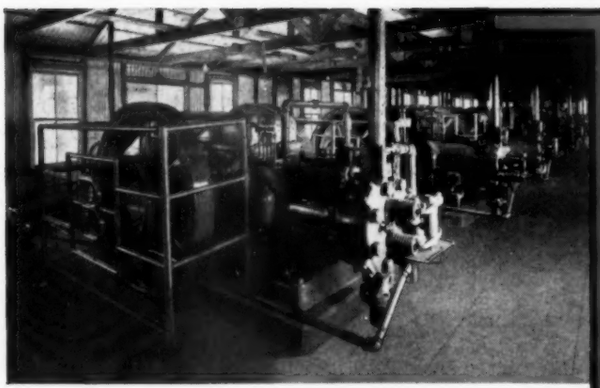
Declining popularity of crude produced from prorated wells in the Howard-Glasscock County district with the seven pipe line companies connected to the field caused producing companies to hold a conference in Fort Worth, May 15, and agree to suspend existing proration rules and place all wells on a maximum output of 200 barrels daily. The prorated wells are allowed a maximum production of 37,500 barrels daily under the proration rules of the Texas Railroad Commission, but have been producing about 10,000 barrels below the maximum in recent months, with an output of 28,169 barrels daily average in April. The crude buyers have revised their schedules on maximum takings since May 10 to provide outlet for only 24,000 barrels, and the 200-barrel limit for each well during the last 20 days in May is expected to balance the crude yield for the month with pipe line requirements for the same period.

Reduction of Humble Oil & Refining Company's purchases in the Howard-Glasscock County district from 6500 to 3500 barrels daily beginning May 11 was largely responsible for the local crude market disturbance. None of the other purchasers elected to absorb the discarded connections, while the two largest members of the latter group have expressed a desire to reduce their takings.

E. E. Andrews, umpire for the Howard-Glasscock County district, notified the operators during the Fort Worth meeting that his estimate of 80,000 barrels as being the potential daily pumping capacity of the wells subject to proration rules in the 2200 and 3000-foot horizons is not exaggerated. He explained that the placing of a temporary limit of 200 barrels daily per well after May 10 was imperative to avoid a complete shutdown on leases affected by purchasers trimming their takings. Complaints from operators led to the calling of the Fort Worth meeting by M. B. Sweeney, chairman of the proration advisory committee. The operators then endorsed Andrews' plan, and ordered that it be continued over the balance of the month.

Harvey C. Hardison, petroleum engineer for The California Company, suggested that a committee be appointed to perfect a plan to restore the proration plan beginning in June to some basis that would give proper recognition to big wells over those not capable of yield more than several hundred barrels daily. This committee is to consist of Hardison, F. M. Jacobson, Continental Oil Company, Fort Worth, and C. W. Tomlinson, Schermerhorn Oil Company, with Andrews co-operating. A report of the committee will be made before the close of May, and another meeting of operators may be held to act on their recommendations.

Representatives of Shell Petroleum Corporation testified that the nominated daily crude runs from the field has been 8860 barrels for the past three months, but owing to congestion in the field actual takings have been considerably greater. A vote of thanks was given by the operators for such co-operation by the company. Announcement was also made that Shell Petroleum Corporation expects to share in the flush crude output of the Hobbs field, New Mexico, and that to properly protect leases in the latter field with pipe line runs it will later become necessary for Shell Pipe Line Company to reduce crude runs in West Texas fields that can be controlled by proration enforcement.



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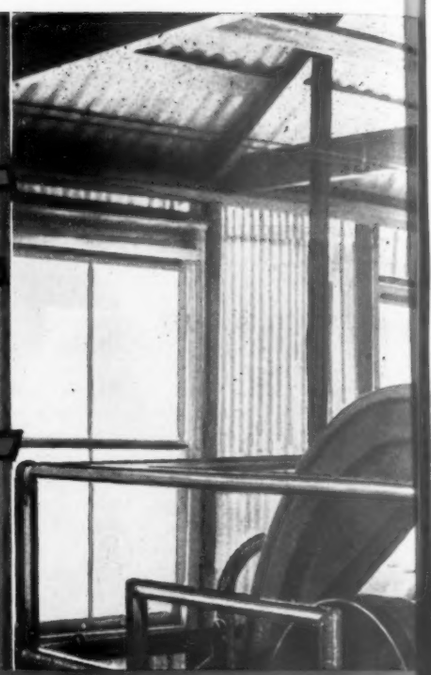

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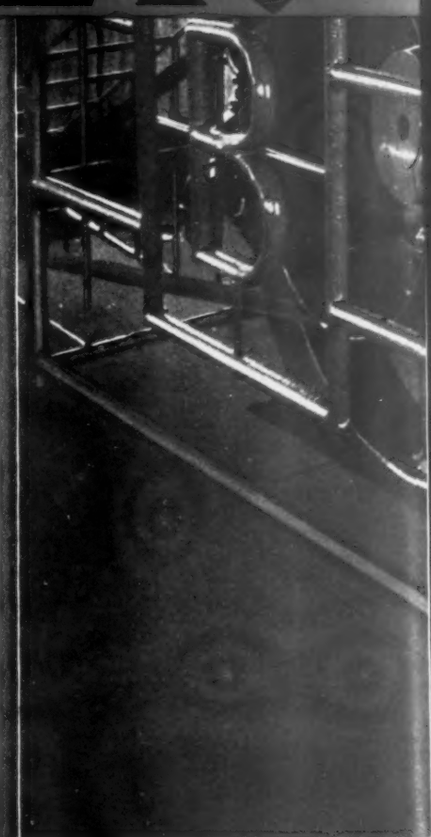

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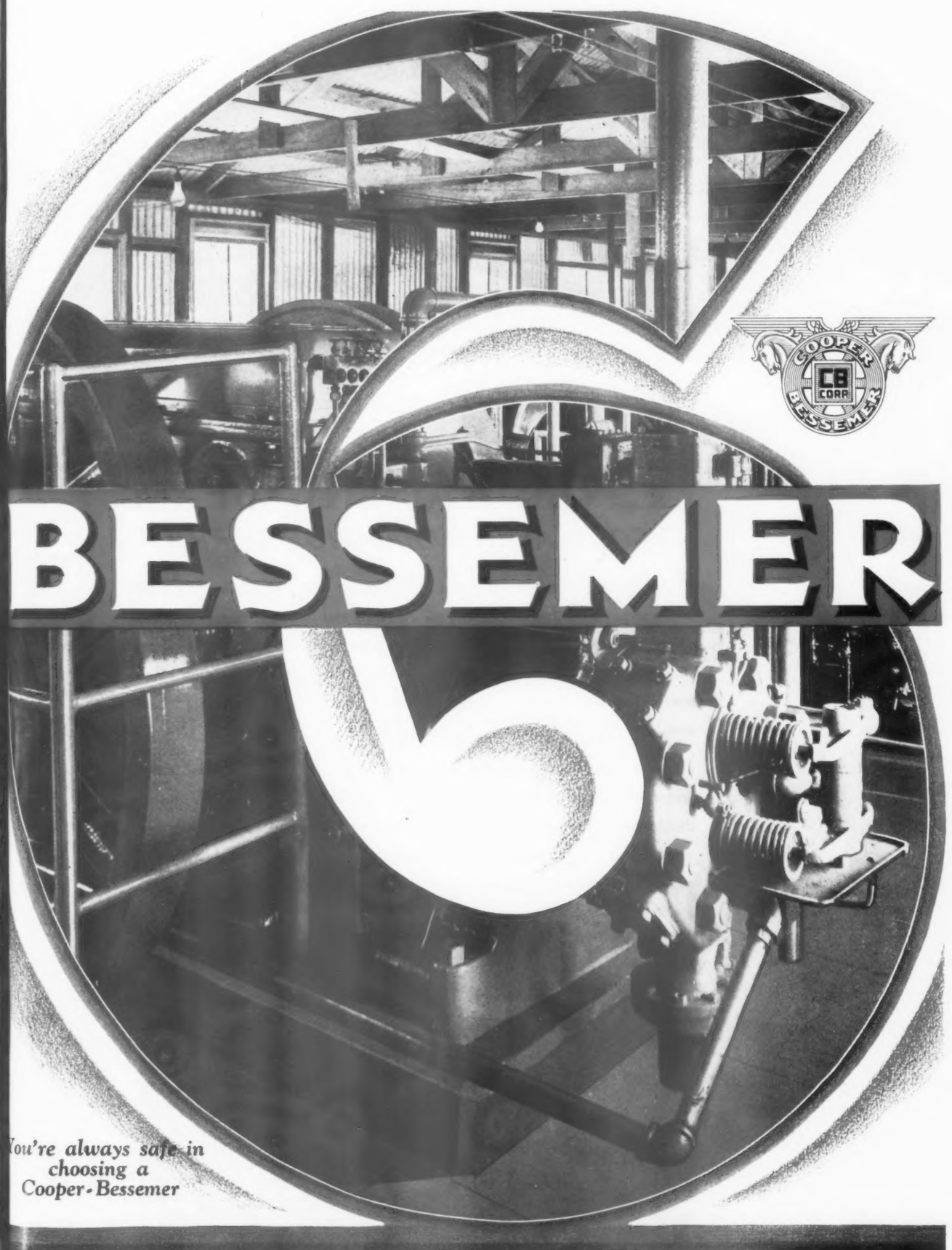
Branch offices in all principal gas and oil fields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Moore WALKING BEAM

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A heavy, rolled steel girder section forms the basis of Moore Walking Beam strength. It has electrically welded web and flange stiffeners at nose, tail, saddle and intermediate points. The cast steel temper screw bearing support is secured to the beam by both rivets and electric welding. Removable temper screw bearings ordinarily furnished are of babbitted cast iron. Hard wood bearings can be supplied.

There are beams for pumping or cable drilling. Of special interest is the underslung type for pumping service, which is pictured above. With this design the deflection of the polish rod is very slight and even the longer stroke wells can be pumped without special rod hangers. The cable drilling beam has the temper screw bearing on top instead of being underslung.

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DALLAS, TEXAS WICHITA, KANSAS CASPER, WYO.

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Stocks in All Principal Fields

Markets--Production--Crude Prices

H. J. STRUTH, *Staff Economist, Houston, Texas*

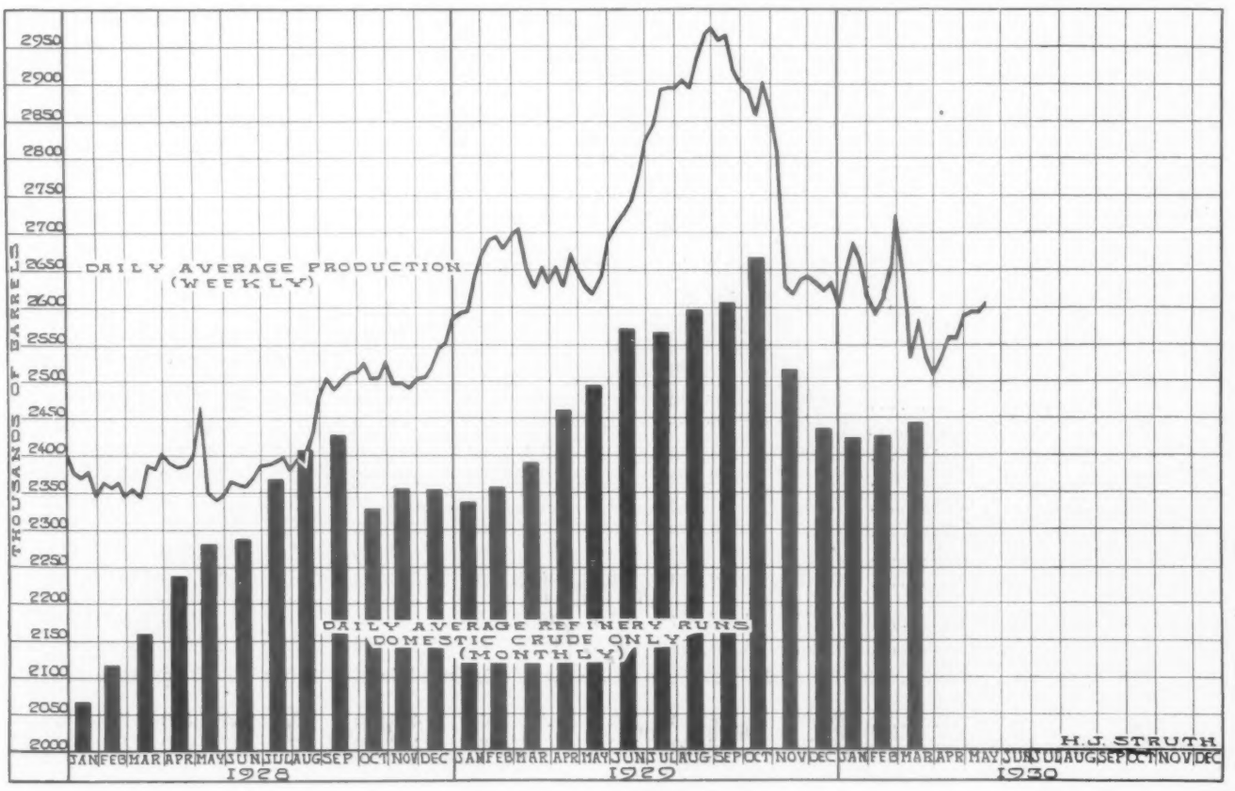
Production Up-trend Endangers Market Structure

ANOTHER gain of 12,750 barrels in crude production last week brought the daily average up to 2,607,900 barrels. This is a total gain from the low point reached at the end of March of about 100,000 barrels daily. In March, the net decline from the peak of last August amounted to about 467,000 barrels daily, while the present status exhibits a well defined trend toward dissipation of accrued curtailment benefit. In consequence of this up-trend in production the crude market structure is in a dangerous position that presents a most unsatisfactory outlook for the immediate future.

Action taken by Standard Oil Company of California in posting drastic price reductions for Santa Fe Springs crude, as well as previous action taken in Pennsylvania by the Joseph Seep Purchasing Agency, in lowering the posted price of Pennsylvania crude, serve as warnings against over-production.

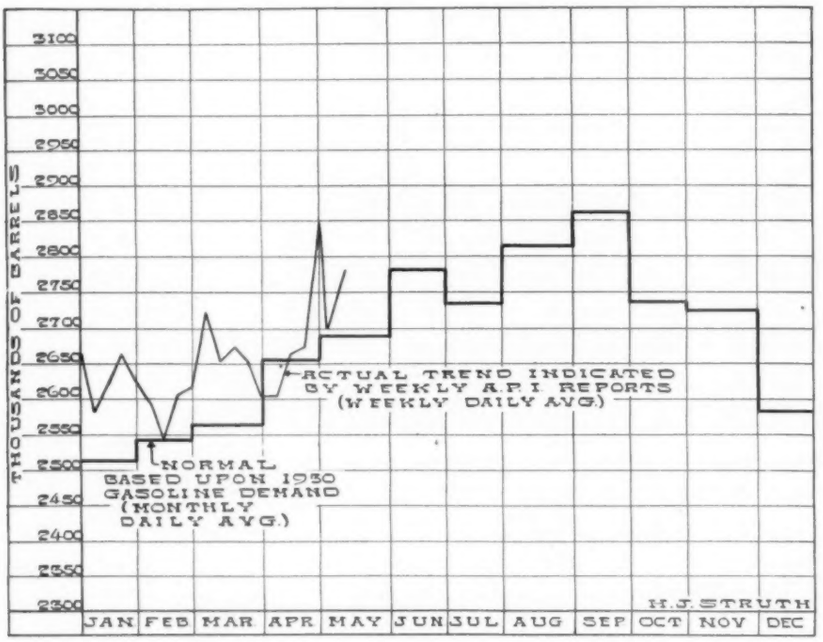
The present situation in the crude market demands immediate attention of both crude producers and crude buyers. Up to a few weeks ago, the industry was on the mend and the outlook for increased demand for crude presented a rather pleasing picture. Today, there is a restless spirit in a number of flush areas that could easily develop into another period of depression that would perhaps exact a greater financial toll than was previously experienced. What has happened in California and Pennsylvania should be a timely warning to operators throughout the United States. If everyone would endeavor to cooperate with the movement to curtail production to a normal level, there would be less cause for grievances. The only way to prevent over-production, it seems, is to post drastic price reductions, as was done in California. The results there furnish

DOMESTIC PRODUCTION AND REFINERY RUNS



HOW LAST WEEK'S DAILY AVERAGE PRODUCTION COMPARES WITH NECESSARY AND NORMAL QUOTA LIMIT

	Necessary Daily Average 2nd Quarter 1930	Quota Limit Prescribed to Correct Previous Excesses	Actual Daily Average Week Ending May 17, 1930	Excess
Arkansas	69,879	69,879	57,600	—12,279
California	669,791	602,566	632,100	29,534
Kansas	116,044	111,552	131,400	19,848
Louisiana	58,011	50,503	62,900	12,397
Oklahoma	684,274	681,493	660,150	—21,343
Texas	771,384	729,567	842,350	112,783
Balance of U. S.	235,945	235,945	221,400	—14,545
Total	2,605,328	2,481,505	2,607,900	126,395



convincing proof that it is better to produce less oil for more money than to produce more oil at prices which offer little or no opportunity for profit.

Oklahoma, Kansas, Arkansas and Rocky Mountain states registered increased production last week. Oklahoma and Kansas contributed a combined gain of 11,050 barrels a day, while the Rocky Mountain area registered a gain of 10,200 barrels daily. Production in Arkansas increased only 500 barrels.

There seems to be some difference of opinion among Oklahoma operators as to the exact status of the crude situation there. Some believe that the demand is greater than the current supply, while others say that a considerable amount of oil is being run to storage. Earlier estiates show that the demand for Oklahoma crude is still somewhat above the current supply, although it is possible that competition in the Chicago and Atlantic Coast markets has supplanted a sizeable quantity of Oklahoma's supply. At any rate, there is little doubt but that the combined supply of Oklahoma and Texas is excessive, while Kansas has been piling up an excess supply of crude for some time. If we accept the estimates of potential demand for Oklahoma crude, outside of that state, there is an indicated shortage. If we assume that a part of the indicated excess production in Texas is actually supplanting Oklahoma crude, there is undoubtedly an excess production in the latter state. At present, the figures at hand show that Oklahoma is drawing on stocks to the extent of about 24,000 barrels daily, while Texas is building up stocks to the extent of about 75,000 barrels daily. A late check may reveal, however, that the situation in Texas is about in balance, while the difference in the two sets of figures may represent additions to storage in Oklahoma.

Changes in Production

Following are the more important changes in production last week as re-

CRUDE RUNS TO STILLS, GASOLINE AND GAS AND FUEL OIL STOCKS, WEEK ENDING MAY 10, 1930

(Figures in barrels of 42 gallons)

District—	Potential Daily Capacity	Potential Capacity Reporting Total	Potential Capacity Reporting Per Cent	Crude Runs to Stills Total	Crude Runs to Stills Daily Average	Crude Runs to Stills Per Cent Operated	Gasoline Stocks	Gas & Fuel Oil Stocks
East Coast	605,700	605,700	100.0	3,327,000	475,300	78.5	9,246,000	6,906,000
Appalachian	128,100	114,100	89.1	641,000	91,600	80.3	1,788,000	760,000
Indiana, Illinois, Kentucky	378,000	376,000	99.5	2,344,000	334,800	89.0	8,553,000	3,751,000
Oklahoma, Kansas, Missouri	462,200	411,700	89.1	2,127,000	303,900	73.8	4,455,000	4,183,000
Texas	788,000	715,700	90.8	4,413,000	630,400	88.1	7,942,000	10,132,000
Louisiana-Arkansas	270,600	262,000	96.8	1,199,000	171,300	65.4	2,615,000	1,985,000
Rocky Mountain	148,900	139,300	93.6	415,000	59,300	42.6	2,743,000	1,083,000
California	897,400	891,400	99.3	4,156,000	593,700	66.6	15,861,000	108,149,000
Total week May 10	3,678,900	3,515,900	95.6	18,622,000	2,660,300	75.7	53,203,000	136,949,000
Total week May 3	3,678,900	3,518,400	95.6	18,073,500	2,581,900	73.4	53,826,000	136,015,000
The Texas and Louisiana Gulf Coastal figures shown below are included in the totals of their respective districts.								
Texas Gulf Coast	526,500	526,500	100.0	3,350,000	478,600	90.9	6,725,000	7,413,000
Louisiana Gulf Coast	147,500	147,500	100.0	822,000	117,400	79.6	2,221,000	1,111,000

FIELD STATISTICS OF IMPORTANT DISTRICTS

Pool—	Oil Wells Completed	Total Initial Production	Initial Per Well	Number Producing Wells	Daily Production Barrels	Daily Prod. Per Well	Rigs Up	Wells Drilling
WEST TEXAS:								
Ector County	27	21,185	785	26	13,625	524[3]	1	28
Hendrick	622	3,117,345	5,012	567	77,130	136[3]	.	2
Church & Fields	218	216,005	991	211	20,920	99	2	1
Gulf-McElroy	86	62,365	725	84	14,260	170	3	2
Yates	385	2,517,505	6,565	373	113,770	305[3]	5	8
TEXAS PANHANDLE:								
Gray County	603	447,665	742	578	71,010	123	28	60
OKLAHOMA:								
Oklahoma City	190[2]	1,727,371	9,091	48[2]	97,883	2,035	82	226
CALIFORNIA:								
Santa Fe Springs[1]	637	1,651,150	2,592	312	117,000	375	8	57

[1]Includes deep zone production. For field total add 95 wells and 11,600 bbls.

[2]Due to proration in this field figures for this field are inconsistent. There are 228 completed wells, while only 48 were on production the day this total was made.

[3]Production partially pinched.

ported by the American Petroleum Institute:

		Barrels
Gray County	Increase	2,600
Hutchinson County	Decrease	1,400
Crane-Upton	Decrease	1,100
Howard	Decrease	1,900
Winkler	Decrease	2,600
Darst Creek	Increase	2,250
Pettus	(New)	3,100
Carr City	Increase	1,200
Osage	Increase	1,000
Seminole	Increase	1,050
Bowlegs	Decrease	1,100
Searight	Increase	3,350
Little River	Decrease	3,200
Earlsboro	Increase	4,200
East Earlsboro	Decrease	1,700
St. Louis	Increase	1,300
Allen	Decrease	2,500
Mission	Increase	2,900
Oklahoma City	Increase	1,550
Santa Fe Springs	Decrease	5,500
Midway-Sunset	Decrease	1,000
Ventura Avenue	Increase	2,200
Sedgwick	Decrease	1,300
Voshell	Increase	4,300
Salt Creek	Increase	4,850
Bal. Lea and Eddy Counties	Increase	5,350
Eastern States	Decrease	1,250

There was practically little change in the status of refinery crude runs last week. According to the American Petroleum Institute refinery still runs for the week ending May 17 aggregated 18,520,000 barrels, compared with 18,622,000 barrels for the week ending May 10. This quantity is, of course, too large and continuation of such excessive processing is bound to further complicate the general market situation. Stocks of gasoline on May 17 aggregated 53,320,000 barrels, a gain of 117,000 barrels over the preceding week. Apparently, even the severe weather conditions of the past few weeks have had little effect upon the status of refinery operations. Texas and the Atlantic Coast continue to reflect a condition of overproduction, as a result of excessive processing of crude.

Storage Oil Sold

The sale of approximately 1,000,000 barrels of Crane County storage oil by the

IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

(Barrels of 42 gallons)

	Week Ended May 10	Week Ended May 3
AT ATLANTIC COAST PORTS—		
Baltimore	80,000	95,000
Boston	157,000	.....
New York	1,108,000	1,148,000
Philadelphia	205,000	293,000
Others	219,000	223,000
Total	1,769,000	1,759,000
Daily Average	252,714	251,286
AT GULF COAST PORTS—		
Galveston District	52,000	59,000
New Orleans and Baton Rouge	30,000	37,000
Port Arthur and Sabine District	.....	65,000
Tampa	.....	35,000
Total	82,000	196,000
Daily Average	11,714	28,000
AT ALL UNITED STATES PORTS—		
Total	1,851,000	1,955,000
Daily Average	264,428	279,286
Daily Average Four Weeks Ended	268,035	251,964
Distribution of Total Imports is as follows:		
Crude	1,167,000	1,284,000
Gasoline	461,000	275,000
Kerosene	.....	5,000
Gas Oil	43,000	.....
Fuel Oil	180,000	391,000
Total	1,851,000	1,955,000

CALIFORNIA OIL RECEIPTS AT ATLANTIC AND GULF COAST PORTS

(Barrels of 42 gallons)

	Week Ended May 10	Week Ended May 3
AT ATLANTIC COAST PORTS—		
Baltimore	49,000	.....
Boston	.....	95,000
New York	76,000	293,000
Philadelphia	114,000	.....
Others	.....	.....
Total	239,000	388,000
Daily Average	34,143	55,429
AT GULF COAST PORTS—		
Total	24,000	129,000
Daily Average	3,428	18,428
AT ATLANTIC AND GULF COAST PORTS—		
Total	263,000	517,000
Daily Average	37,571	73,857
Daily Average Four Weeks Ended	50,607	50,286
Distribution of Total California receipts is as follows:		
Gasoline	263,000	372,000
Gas Oil	.....	50,000
Fuel Oil	.....	95,000
Total	263,000	517,000

Weekly Comparisons of Permits Granted for New Wells

State—	Week Ending May 17	Previous week	This week 1929	Total this month	This month 1929	Total this year	Total this date last year	1929 year total
Arkansas	4	...	2	8	3	45	49	159
California	12	12	16	43	58	284	535	1,231
Louisiana	34	25	12	72	33	425	298	903
Kansas	30	13	31	68	95	388	378	1,079
Oklahoma	69	78	60	234	219	1,221	1,196	3,578
Texas	173	176	185	562	522	3,048	3,134	8,697
Total	322	304	306	987	930	5,411	5,590	15,647

Warner-Quinlan Company of Texas to Magnolia Petroleum Company has been followed by the latter withdrawing the oil at rate of 7500 barrels daily during the first 15 days in May, while shipments are to be increased to 10,000 barrels daily. Negotiations for this large storage oil deal began shortly after the crude advance in April, and it is reported that Warner-Quinlan Company received the market price for the crude, which ranges from 28 to 30 gravity, while Magnolia Petroleum Company is to have use of the steel tanks bearing the oil for six months without paying rental.

The storage oil involved in the above deal was accumulated during the early development of the Church & Fields area, and Warner-Quinlan Company gained possession of same in May, 1928, through the purchase of properties of three companies in the field. About 2,000,000 barrels of storage oil was originally obtained by the company through these purchases along with 28 55,000-, three 80,000-, one 64,000- and one 37,500-barrel steel tanks, but stocks were cut 50 per cent during 1929. The company made no plans for disposing of these tanks, while in the meantime its current production in the field is being sold to Tidal Refining Company, which gathers the oil and turns same over to The Texas Pipe Line Company for common carrier movement to the Gulf Coast.

The slash in California crude prices followed failure of a few operators to meet provisions of the curtailment agreement. Standard Oil Company of California, in announcing the reduction, stated that conditions at Santa Fe Springs do not justify offering prices that will encourage overproduction and that failure of the operators to agree on the curtailment program endangers the entire conservation plan. The new schedule will be met by other purchasing companies. The new posted prices at Santa Fe Springs are: 21-27.9 gravity, 50 cents; 28-28.9 gravity, 56 cents; 29-29.9 gravity, 62 cents; 30-30.9 gravity, 68 cents; 31-31.9 gravity, 74 cents; 32-32.9 gravity, 80 cents; 33-33.9 gravity, 85 cents; 34-34.9 gravity, 90 cents, and 35 gravity and above, 95 cents. This is a minimum reduction of 42 cents and a maximum reduction of 95 cents.

A last-minute rush by Long Beach operators to sign the agreement and bring production down to a point near the allowable saved this field from a similar cut. Only three small operators remain outside the fold in this greatest California field, production represented by these holdouts being less than one per cent of the total. The state is trying to get an injunction against operators in this field, prohibiting them from wasting gas, but definite action is not expected for several days. With nearly 250 operators, the success of curtailment here is remarkable.

Fear that the whole curtailment scheme will crumble is being expressed, but there is about an even chance that conditions will correct themselves and the price of Santa Fe Springs crude restored. Such an inconsistency as a low price for crude in one field and a much higher price in adjoining fields cannot exist long, however, and conditions must either improve or get worse and the price cutting spread.

Setting up of a new state allowable of 596,000 barrels is important and only Santa Fe Springs has failed to ratify the lower figure.

Gasoline prices are slightly weaker than last week, with service stations showing a tendency toward lower prices. The majors are holding to the 19½-cent quotation in the Los Angeles basin district. Wholesale gasoline prices have not firmed above the 6½-cent price posted at San Pedro by Standard Oil Company, this figure practically establishing the export price.

Fuel oil is moving at between 60 cents and 66 cents, with the demand barely exceeding that of last year.

(Continued on page 62)

Summarized Review of Field Results

State—	Completions This week	Completions Last week	Oil Wells This week	Oil Wells Last Week	Gas Wells This week	Gas Wells Last week	Failures This week	Failures Last week	Initial Prod. This week	Initial Prod. Last week
Arkansas	1	1	1	..	..	1	..	..	12	..
California	13	24	12	23	..	..	1	1	10,485	13,745
Illinois	5	..	3	..	..	..	2	..	44	..
Indiana	6	..	4	..	1	..	1	..	87	..
Kansas	13	18	5	12	3	..	5	6	2,295	5,200
Kentucky	20	42	10	36	3	..	7	6	326	856
Louisiana	18	19	8	7	2	6	8	6	685	792
New York	13	..	13	..	..	..	..	..	81	..
Ohio	37	46	9	21	11	11	17	14	379	571
Oklahoma	70	62	43	36	3	6	24	20	63,922	112,659
Pennsylvania	56	3	46	2	4	..	6	1	367	8
Texas	131	156	75	77	8	4	48	75	75,017	37,282
West Virginia	19	16	5	9	11	4	3	3	70	63
Total	402	387	234	223	46	32	122	132	153,770	171,176
Increase this week	15	..	11	..	14	..	..	..	..	..
Decrease this week	..	..	..	..	..	..	10	..	17,406	..

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United States Daily Average Production

Figures below are taken from the complete revised estimates of the AMERICAN PETROLEUM INSTITUTE except for the current week, which are advance estimates issued by the A. P. I. and are subject to revision:

1929	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Arkansas	Eastern States	Rocky Mountain	California	United States Daily Av.	United States Total
March	666,500	95,500	662,500	147,750	35,800	74,250	108,850	70,400	786,000	2,647,400	82,068,350
April	665,600	106,400	650,100	154,550	35,550	72,900	110,850	69,400	781,350	2,646,700	79,402,100
May	679,650	115,400	651,100	150,350	35,350	71,500	114,150	72,850	749,250	2,639,600	81,827,600
June	685,200	120,750	688,200	147,500	35,700	70,050	116,750	72,000	827,200	2,763,400	82,902,250
July	722,050	124,250	718,950	148,150	35,750	68,650	122,000	74,250	874,850	2,888,900	89,555,250
August	728,100	127,950	750,750	153,100	36,300	66,900	126,600	77,900	873,300	2,940,900	91,167,250
September	714,050	128,450	741,200	156,600	37,050	65,300	137,250	78,600	874,850	2,933,350	88,000,650
October	673,600	113,400	714,550	167,050	39,700	64,550	137,400	77,950	876,600	2,864,800	88,809,500
November	640,300	110,050	702,350	171,350	36,250	63,700	135,400	76,550	706,500	2,642,800	79,285,050
December	650,000	111,600	687,850	161,350	38,700	61,850	140,650	76,150	698,200	2,626,350	81,417,000
1930											
January	671,050	111,700	672,650	178,300	37,650	58,500	142,250	73,850	688,850	2,634,800	81,574,650
February	631,900	111,400	654,600	199,950	39,450	58,400	135,050	74,850	746,550	2,652,150	74,280,200
March	622,650	115,500	644,400	206,000	41,600	58,600	132,700	73,600	649,000	2,544,050	78,865,400
April*	657,450	121,950	639,750	207,150	42,250	57,750	138,900	75,600	625,400	2,566,200	76,988,700
May 3	658,800	125,450	661,200	201,100	40,900	58,050	139,400	77,200	633,100	2,595,200	18,166,400
May 10	653,350	127,150	663,250	205,150	41,150	57,050	138,200	74,250	634,800	2,595,150	18,166,050
May 17	660,150	131,400	659,750	204,500	41,000	57,600	136,950	84,450	632,100	2,607,900	18,255,300
Increase	6,800	4,250	.....	.....	.....	550	.....	10,200	.....	12,750	89,250
Decrease	.....	.....	3,500	650	150	....	1,250	....	2,700	.....	.....

*Preliminary Figures.

TEXAS
(Outside Gulf Coast)
PANHANDLE DISTRICT

	May 17	May 10
Carson County	8,650	9,000
Gray County	70,850	68,250
Hutchinson County	22,900	24,300
Wheeler County	600	900
Others	500	400
Total	103,500	102,850

NORTH TEXAS

Archer County	19,000	18,550
Burkburnett	8,300	8,300
Electra	11,200	11,100
Iowa Park-KMA	5,800	5,700
Montague and Cooke Cos.	10,400	10,500
Wilbarger	24,200	24,050
Others	2,000	1,900
Total	80,900	80,100

WEST CENTRAL TEXAS

Brown County	7,500	7,600
Callahan County	4,000	4,000
Coleman County	4,100	4,200
Eastland-Desdemona	5,500	5,500
Jack County	3,850	4,100
Palo Pinto County	600	650
Shackelford County	6,550	6,650
Stephens County	6,050	6,150
Throckmorton County	1,000	1,150
Young County	19,200	18,800
Others	1,000	1,150
Total	59,350	59,950

WEST TEXAS

Ector	13,400	14,100
Crane-Upton Counties	43,200	44,300
Crockett County	2,050	2,000
Howard County	36,100	38,000
Jones County	1,300	1,400
Mitchell-Scurry Cos.	2,350	2,250
Yates	113,800	113,500
Pecos County	4,000	4,800
Reagan County	16,400	16,400
Winkler County	75,200	77,800
Others	2,750	2,800
Total	310,550	317,350

EAST CENTRAL TEXAS

Boggy Creek	3,501	3,600
Corsicana-Powell	6,000	6,100
Currie	300	300
Mexia	4,200	4,300
Nigger Creek	200	200
Richland	250	250
Wortham	900	900
Van Zandt	24,700	23,500
Total	40,050	39,150

SOUTHWEST TEXAS

Darst Creek	22,000	19,750
Dale	300	300
Laredo District	8,100	8,200
Luling	9,400	9,500
Lytton Springs	800	850
Somerset	1,200	1,200
Salt Flat	21,900	22,300
Others	1,700	1,750
Total	65,400	63,850
T'tl Tex. (Outside Gulf Coast)	659,750	663,250

TEXAS GULF COAST

Esperson	3,000	3,450
Barbers Hill	18,050	18,200
Batson	1,100	1,100
Big Creek	4,250	4,300
Blue Ridge	1,900	2,100
Boling	1,100	1,050
Damon Mound	600	600
Goose Creek	4,300	4,500
Hull	10,650	10,100
Humble	18,000	18,800
Orange County	2,350	2,350
Pettus	3,100	....
Pierce Junction	9,650	9,350
Refugio	39,600	38,850
Raccon Bend	12,050	12,000
Saratoga	1,050	1,100
Sour Lake	2,350	2,350
South Liberty	4,300	4,600
Spindle Top	15,900	16,200
Sugar Land	12,200	11,850
West Columbia	5,550	5,600
Washington County	1,600	1,600
Fannett	1,050	1,350
Port Neches	1,700	1,600
North Dayton	500	550
Others	6,700	9,500
Total	182,600	183,050
Texas Total	842,350	846,300

OKLAHOMA

Asher	2,100	1,950
Carr City	11,100	9,900
Logan County	6,000	5,700
Braman	3,450	3,500
Blackwell	3,700	3,700
Hubbard	1,600	1,600
Thomas	650	650
Tonkawa	7,800	7,800
Garber	4,750	4,750
Burbank	16,350	16,500
Osage (outside Burbank)	26,100	25,100
Cushing	13,900	13,900
Yale Jennings	8,600	8,600
Davenport	1,200	1,150
Bristow Slick	16,000	16,050
North Okmulgee	10,450	10,450
South Okmulgee	6,250	6,250
Cromwell	7,600	7,600
Papoose	2,850	2,850
Wewoka	3,700	3,700
Seminole	16,500	15,450
East Seminole	2,950	3,700
Bowlegs	13,300	14,400
Searight	12,300	8,950
Little River	28,900	32,100
East Little River	15,500	15,500
Earlsboro	44,950	40,750
East Earlsboro	34,550	36,250
Duncan District	7,700	7,700
Graham	3,500	3,500
Fox	1,250	1,250
Healdton	11,900	11,900
Hewitt	7,000	7,000
Scholem Alechem	13,600	13,650
Pearson	900	800
St. Louis	45,000	43,700
Allen	16,450	18,950
Maud	6,450	5,900
Mission	15,950	13,050
Oklahoma City	114,800	113,250
Sasakwa	9,850	10,800
Konowa	15,800	15,700
Others	66,900	66,400
Total	660,150	653,350

CALIFORNIA

Santa Fe Springs	129,000	134,500
Long Beach	99,500	99,800
Huntington Beach	28,300	28,300
Dominguez	10,400	10,000
Inglewood	17,200	17,400
Midway-Sunset	67,000	68,000
Ventura Avenue	51,200	49,000
Seal Beach	23,900	23,500
Elwood-Goleta	44,900	45,300
Kettleman Hills	15,700	15,000
Others	145,000	144,000
Total	632,100	634,800

KANSAS

Greenwood County	19,000	19,000
Florence-Covert	800	800
Peabody-Ebling	3,100	3,100
Eldorado-Towanda	14,350	14,300
Augusta-Fox Bush	2,950	2,950
Rainbow Bend	1,050	1,100
Russell	3,500	3,550
Churchill	4,200	4,000
Oxford	2,900	2,850
Sedgwick	19,900	21,200
Voshell	22,150	17,850
Others	37,500	36,450
Total	131,400	127,150

NORTH LOUISIANA

	May 17	May 10
Homer	3,600	3,550
Haynesville	4,600	4,500
Caddo Light	9,650	9,850
Caddo Heavy	2,900	2,900
DeSoto-Red River	3,100	3,100
Holly	750	850
Carterville	3,300	3,600
Cotton Valley	2,200	2,150
Urania	5,400	5,400
Zwolle	3,800	3,550
Others	1,700	1,700
Total North Louisiana	41,000	41,150

LOUISIANA GULF COAST

Lake Barre	800	900
Port Barre	2,300	2,000
Bayou Boullion	100	150
East Hackberry	2,100	2,200
Hackberry	1,400	1,300
Edgerly	550	550
Evangeline	800	800
Lockport	2,800	2,750
Sorrento	200	350
Sulphur Dome	5,700	5,900
Sweet Lake	100	100
Vinton	3,700	3,700
Others	1,350	1,400
Total Louisiana Gulf Coast	21,900	22,100
Louisiana Total	62,900	63,250

ARKANSAS

El Dorado	4,050	4,100
Champagnolle	3,900	4,100
Smackover Light	5,300	5,300
Smackover Heavy	40,250	40,250
Stephens	950	950
Nevada	950	950
Lisbon	1,000	1,000
Others	1,200	1,200
Total	57,600	57,850

MOUNTAIN STATES
WYOMING

Salt Creek	30,950	26,100
Grass Creek	2,100	2,100
Elk Basin	850	750
Big Muddy	2,100	2,050
Lost Soldier	2,800	2,950
Rock River	2,150	2,200
Lance Creek	150	150
Oregon Basin	4,700	4,700
La Barge	1,850	1,850
Others	5,300	5,150
Total	52,950	48,000

MONTANA

Cat Creek	1,300	1,200
Sunburst	5,600	5,600
Pondera	2,300	2,350
Others	100	50
Total	9,300	9,200

COLORADO

Moffats (Craig)	850	1,000
Fort Collins	1,450	1,500
Florence	550	550
Others	1,450	1,550
Total	4,300	4,600

NEW MEXICO

Table Mesa	100	100
Artesia	750	700
Hogback	450	450
Rattlesnake	450	400
Bal. Lea and Eddy Counties	15,250	9,900
Others	900	900
Total	17,900	12,450
Total Mountain States	84,450	74,250

EASTERN STATES
(Including Ill., Ind., Ohio, W. Va., Pa., Ky., N. Y.) 126,000 127,000

Michigan	10,950	11,200
Total Eastern States	136,950	138,200

PRODUCTION SUMMARY

East of Rockies	1,891,350	1,886,100
Total U. S.	2,607,900	2,595,150

Minimize! Wear with National

SPECIAL ANGLITE DIAMOND-SUB METAL

Special Anglite can be successfully applied with electric arc as well as with the acetylene torch, and fuses very easily with both. It owes its perfect bonding qualities to a special alloying element used in its manufacture. Due to the fact that every piece of Special Anglite is free from surface oxides and scale, it gives off no harmful gases during application. Also because of its lower specific gravity, Special Anglite covers more bit surface per pound than other insert metals—it is the least expensive diamond-sub metal on the market. Write for prices and full particulars.

NATIONAL CASING PROTECTORS

National Casing Protectors prevent abrasive wear of drill pipe against casing and tend to eliminate fishing jobs, twist-offs, collapsed casing, and thin tool joints and collars. Once installed, National Protectors stay in place and last indefinitely. Write for complete information and prices.

National
TOOL & METALS, INC.

Division of
GLOBE OIL TOOLS CO.,
Torrance, Calif.

CRUDE OIL PRICE QUOTATIONS

(Revised to May 20)

CHANGES

Effective May 16, Joseph Seep Purchasing Agency reduced all grades of Pennsylvania crude 25 cents a barrel. Announcement was also made to the effect that postings would be discontinued on Bradford and New York Transit crude.

Effective May 17, Standard Oil Company of California reduced Santa Fe Springs crude from 75 to 90 cents a barrel, making 21 to 27.9 gravity 50 cents and 35 and above 95 cents a barrel.

EASTERN STATES

(Effective May 16, 1930)

Penn Grade Oil in National Transit Lines (Pennsylvania)	2.30
Penn Grade Oil in Southwest Pennsylvania Lines (Penna.)	2.25
Penn Grade Oil in Eureka Pipe Line Lines (West Virginia)	2.15
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	1.95
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia)	1.75
Corning 35-cent Grade Oil in Buckeye Pipe Line Co.'s Lines	1.55
Corning 25-cent Grade Oil in Buckeye Pipe Line Co.'s lines	1.75
Somerset Oil in Cumberland Pipe Line lines (Kentucky)	1.37
Ragland Grade Oil in Cumberland Pipe Line lines (Kentucky) (Effective Jan. 29, 1929)	.60
Wayne Dist. Oil in Cumberland Pipe Lines	1.24

CENTRAL STATES

(Effective April 11, 1930)
Posted by Ohio Oil Co.

Illinois	$1.65
Indiana	1.47
Lima	1.70
Plymouth	1.23
Princeton	1.65
Wooster	1.80

WESTERN KENTUCKY

All grades	1.55

OKLAHOMA-KANSAS

(Effective April 10, 1930)

Below 25 gravity	$ .70
25 to 25.9 gravity	.70
26 to 26.9 gravity	.76
27 to 27.9 gravity	.82
28 to 28.9 gravity	.88
29 to 29.9 gravity	.95
30 to 30.9 gravity	1.02
31 to 31.9 gravity	1.10
32 to 32.9 gravity	1.15
33 to 33.9 gravity	1.185
34 to 34.9 gravity	1.22
35 to 35.9 gravity	1.255
36 to 36.9 gravity	1.29
37 to 37.9 gravity	1.325
38 to 38.9 gravity	1.36
39 to 39.9 gravity	1.395
40 to 40.9 gravity	1.43
41 to 41.9 gravity	1.465
42 to 42.9 gravity	1.50
43 to 43.9 gravity	1.535
44 and above	1.57

PANHANDLE

(Effective April 10, 1930)

GRAY COUNTY

Below 29 gravity	.755
29 to 29.9 gravity	.805
30 to 30.9 gravity	.855
31 to 31.9 gravity	.905
32 to 32.9 gravity	.955
33 to 33.9 gravity	1.005
34 to 34.9 gravity	1.055
35 to 35.9 gravity	1.09
36 to 36.9 gravity	1.125
37 to 37.9 gravity	1.16
38 to 38.9 gravity	1.195
39 to 39.9 gravity	1.23
40 to 40.9 gravity	1.265
41 to 41.9 gravity	1.30
42 to 42.9 gravity	1.335
43 to 43.9 gravity	1.37
44 and above	1.405

CARSON-HUTCHINSON COUNTIES

Below 32 gravity	$ .775
32 to 32.9 gravity	.825
33 to 33.9 gravity	.875
34 to 34.9 gravity	.925
35 to 35.9 gravity	.96
36 to 36.9 gravity	.995
37 to 37.9 gravity	1.03
38 to 38.9 gravity	1.065
39 to 39.9 gravity	1.10
40 to 40.9 gravity	1.135
41 to 41.9 gravity	1.17
42 to 42.9 gravity	1.205
43 to 43.9 gravity	1.24
44 and above	1.275

WHEELER COUNTY

Below 30 gravity	$ .755
30 to 30.9 gravity	.805
31 to 31.9 gravity	.855
32 to 32.9 gravity	.905
33 to 33.9 gravity	.955
34 to 34.9 gravity	1.005
35 to 35.9 gravity	.104
36 to 36.9 gravity	1.075
37 to 37.9 gravity	.111
38 to 38.9 gravity	1.145
39 to 39.9 gravity	.118
40 to 40.9 gravity	1.215
41 to 41.9 gravity	.125
42 to 42.9 gravity	1.285
43 to 43.9 gravity	.132
44 and above	1.355

WEST TEXAS

(Effective April 10, 1930)

Crane-Upton, Crockett, Ector, Howard, Pecos and Winkler Counties and Lea County, N. Mex.

Below 25 gravity	$ .65
25 to 25.9 gravity	.68
26 to 26.9 gravity	.71
27 to 27.9 gravity	.74
28 to 28.9 gravity	.77
29 to 29.9 gravity	.80
30 to 30.9 gravity	.83
31 to 31.9 gravity	.86
32 to 32.9 gravity	.89
33 to 33.9 gravity	.92
34 to 34.9 gravity	.95
35 to 35.9 gravity	.98
36 and above	1.01

Magnolia Petroleum Company posts in Crane, Upton and Winkler Counties. Southern Crude Oil Purchasing Company posts only in Crane, Upton and Winkler Counties.

CALIFORNIA CRUDE OIL PRICES AT THE WELL

(EFFECTIVE MAY 17, 1930)

Following are the current prices offered by Standard Oil Company for crude oil at the wells: (Price per barrel of 42 gallons in fields indicated).

Gravity	Ventura*	Signal Hill	Alamitos Heights Seal Beach	Huntington Beach	Inglewood	Olinda-Brea Canon	Athens-Rosecrans Dominguez	Elwood Terrace	Torrance	Richfield	Whittier La Habra	Montebello	Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River	Midway-Sunset Elk Hills	Buena Vista Hills	Lost Hills	Coalinga	Wheeler Ridge
14-14.9	$ .70	$ .70	$ .70	$ .70	$ .70	$ .70	$ ..	$ ..	$ .70	$ .70	$ .70	$ .70	$ .70	..	$ .55	$ .55	$ .55	$ .55	$ .55	$ .55
15-15.9	.70	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.55	.55	.55	.55	.55	.55
16-16.9	.70	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.55	.55	.55	.55	.55	.55
17-17.9	.70	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.55	.55	.55	.55	.55	.55
18-18.9	.75	.76	.76	.76	.76	.76	..	..	.76	.76	.76	.71	.76	..	.55	.62	.62	.62	.62	.62
19-19.9	.80	.82	.82	.82	.82	.82	..	..	.82	.82	.82	.77	.82	..	.55	.70	.70	.70	.70	.70
20-20.9	.85	.88	.88	.88	.88	.88	..	..	.88	.88	.87	.83	.87	..	..	.78	.78	.78	.78	.78
21-21.9	.90	.94	.94	.94	.94	.94	..	..	.94	.94	.93	.90	.93	.50	..	.86	.86	.86	.86	.86
22-22.9	.97	1.00	1.00	1.00	1.00	1.00	..	..	1.00	1.00	.98	.97	.98	.50	..	.94	.94	.94	.94	.94
23-23.9	1.05	1.07	1.07	1.07	1.07	1.07	..	..	1.07	1.07	..	1.05	1.04	.50	..	1.02	1.02	1.02	1.02	1.02
24-24.9	1.08	1.14	1.14	1.14	1.14	1.14	1.14	..	1.14	1.14	..	1.11	1.10	.50	..	1.09	1.09	1.09	1.07	1.07
25-25.9	1.13	1.21	1.21	1.21	1.21	1.21	1.19	..	1.21	1.21	..	1.17	1.16	.50	..	1.16	1.16	1.16	1.12	1.12
26-26.9	1.18	1.28	1.28	1.28	1.28	1.28	1.24	..	1.28	1.28	..	1.23	1.23	.50	..	1.23	1.23	1.23	1.17	1.17
27-27.9	1.23	1.35	1.35	1.35	1.35	1.35	1.29	..	1.35	1.35	..	1.29	1.30	.50	..	1.30	1.30	1.30	1.23	1.22
28-28.9	1.28	1.42	1.42	1.42	1.42	1.42	1.34	..	1.42	1.42	..	1.35	1.37	.56	..	1.35	1.35	1.35	1.27	..
29-29.9	1.33	1.46	1.46	1.46	..	1.46	1.39	..	..	1.46	..	1.38	1.41	.62	..	1.41	1.41	1.41	1.31	..
30-30.9	1.39	1.50	1.50	1.50	..	1.50	1.45	..	..	1.50	..	1.41	1.45	.68	..	1.47	1.47	1.47	1.35	..
31-31.9	1.45	1.55	1.55	1.55	..	1.55	1.51	..	..	..	..	..	..	.74	..	1.53	1.53	1.53	1.39	..
32-32.9	1.51	1.60	1.60	1.60	..	..	1.57	..	..	..	..	..	..	.80	..	1.59	1.59	1.59	1.43	..
33-33.9	1.58	..	..	..	..	..	1.64	..	..	..	..	..	..	.85	..	1.65	1.65	1.65	1.47	..
34-34.9	..	..	..	..	..	..	1.71	1.32	..	..	..	..	..	.90	..	..	..	1.71	1.51	..
35-35.9	..	..	..	..	..	..	1.78	1.39	..	..	..	..	..	.95	..	..	..	1.77	1.55	..
36-36.9	..	..	..	..	..	..	1.84	1.46	..	..	..	..	..	.95	..	..	..	..	..	..
37-37.9	..	..	..	..	..	..	1.90	1.53	..	..	..	..	..	.95	..	..	..	..	..	..
38-38.9	..	..	..	..	..	..	1.96	1.60	..	..	..	..	..	.95	..	..	..	..	..	..
39-39.9	..	..	..	..	..	..	2.02	1.66	..	..	..	..	..	.95	..	..	..	..	..	..
40-40.9	..	..	..	..	..	..	2.08	1.72	..											
41-41.9	..	..	..	..	..	..	2.14	1.78	..											
42-42.9	..	..	..	..	..	..	2.20	1.84	..											

KETTLEMAN HILLS—55 degrees Gravity and above $1.65 per barrel. *Union Oil Company.

General Petroleum Posts following prices 11-13.9 Gr. 50c, 14-22.9 55c at Kern Front, Fruitvale, Mt. Poso Creek and Rd. Mountain districts.

(See page 49)

Give every motorist the gas-performance he should have!...

Install SINCLAIR THREE-GAS SERVICE

In these days a motorist wants to buy gasoline where he can select it to fit his own engine's requirements, and his own driving habits.

Here is where Sinclair Dealers offer a real motoring improvement—*Three-Gas Service!* Here are three different gasolines—each one giving a different performance.

If a motorist likes a sporty, step-and-go gasoline that gets away like a rocket and gives brilliant performance—here's Sinclair Aircraft Gasoline. It is the *Ace* of high test gasolines because it is specially manufactured at Sinclair Refineries, meeting the requirements of the Federal Specifications Board for Aviation Gasoline—domestic grade—and gives sustained power. Due to its careful fractionation it is free from dissolved gases which cause gas locks, uneven distribution, galloping and engine balk.

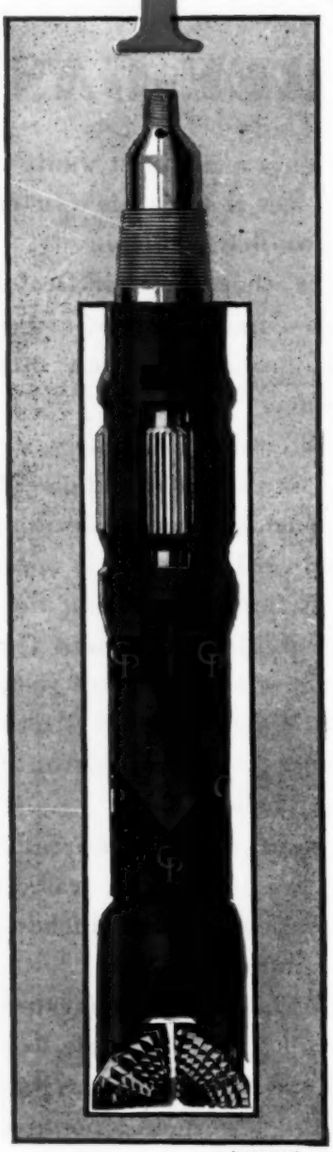
If he wants a high compression gas that gives better low gear performance in traffic and stops knocks on the hill—he can choose Sinclair H-C Gasoline. It's *all* gasoline—nothing added!

And—if he prefers to pay three cents less per gallon—he can fill up with Sinclair Regular Gasoline and get economy and mileage in a gas that's full of eager power! The quality gasoline at a popular price!

Make your Stations *the Stations* where motorists can *choose* from three gasolines, with every assurance of fuel satisfaction. Try selling Sinclair Three-Gas Service!

SINCLAIR REFINING COMPANY, INC.
45 Nassau Street, New York
Atlanta Chicago Houston Kansas City

With the NEW CP "Tucone" ROCK BIT



9 POINTS OF SUPERIORITY

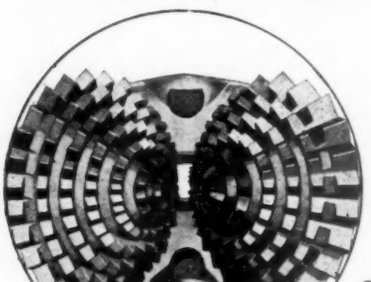
1. SAFETY—Extra large drop-forged spindle bearings. No cone bushings. One-piece bit head. One-piece reamer body. FISHING ELIMINATED
2. CIRCULATION—Fluid stream jets directly on bottom of hole. No side-wall hydraulicking. STRAIGHT HOLE
3. CLEARANCE—Over 34% of hole area is clear. "Balling up" eliminated. STRAIGHT HOLE
4. CONES AND SPINDLE BEARINGS—Cones run on extra large replaceable drop-forged spindle bearings. Stronger and thicker cone wall section due to absence of bushing. GREATER STRENGTH
5. REAMERS—Three units, properly spaced and located for accurate reaming. New type reamer bearing eliminates wear on reamer body. KEEPS GAUGE — ALWAYS!
6. ONE-PIECE BODIES—Both bit and reamer bodies are solid manganese steel. GREATER STRENGTH
7. REPLACEMENTS—Cone-and-bearing units and reamers easily and quickly changed. TIME SAVED
8. LOW MAINTENANCE—Body repairs eliminated. No wear on bit head or reamer body. MONEY SAVED
9. CONE SERVICE—New CP "Red Head" cutting cones can be refitted on your used bearings (only at authorized CP Service Stations) and guaranteed by CP to be as good as if a new bearing were used—at a great saving to you! ECONOMY

(PATENTED)

CLEARANCE!

Over 34% of hole area is clear. "Balling up" is eliminated.

STRAIGHT HOLE!



Over 34% of the hole area is clear!

NOTE, in the illustration at the left, the amount of CLEARANCE, or OPEN HOLE (indicated by the white areas) between the gauge of the cutting cones and the largest diameter of the reamer body, which is formed by the reamer cutters. Note, too, in the above illustration, another view of this CLEARANCE—the amount of open hole formed by the bit body and the cutting cones as presented to the bottom of the hole! When you drill with a CP "Tucone" Rock Bit, OVER 34% OF THE HOLE AREA IS CLEAR—a feature that insures free circulation of the up-going fluid stream, cuts down the clogging of loosened formation, reduces friction and aids in the drilling of STRAIGHT HOLE!

CHICAGO PNEUMATIC TOOL COMPANY

General Offices: Chicago Pneumatic Bldg., 6 East 44th St., New York

OIL TOOL DIVISION OFFICES:

OKLAHOMA CITY, OKLA. 655 Santa Fe Ave., LOS ANGELES, CAL.

KEEPS GAUGE ... ALWAYS! OT-13

That the use of CP "Tucone" Rock Bits will unquestionably result in lower drilling costs, we are ready and willing to prove in any way YOU say! An inquiry to any of the above addresses will receive immediate attention.

CRUDE OIL PRICE QUOTATIONS (*Continued from Page 46*)

HOWARD AND GLASSCOCK COUNTY CRUDE

(Effective April 10, 1930)

Below 25 gravity	$ .65
25 to 25.9 gravity	.68
26 to 26.9 gravity	.71
27 to 27.9 gravity	.74
28 to 28.9 gravity	.76
29 to 29.9 gravity	.78
30 to 30.9 gravity	.80
31 to 31.9 gravity	.82
32 to 32.9 gravity	.84
33 to 33.9 gravity	.86
34 to 34.9 gravity	.88
35 to 35.9 gravity	.90
36 and above	.92

MARKHAM

The Texas Company

(Effective April 11, 1930)

All grades	$ .85

CORSICANA HEAVY

All grades	$ .80

SALT FLAT AND DARST CREEK

All grades	$1.15

SOUTH TEXAS

Mirando	$ .85
Luling	.85

NORTH AND CENTRAL TEXAS

(Effective April 10, 1930)

Ranger, North Texas, Mexia, Powell, Richland, Wortham, Currie, Moran, Nocona and Lytton Springs Crude

Below 25 gravity	$ .72
25 to 25.9 gravity	.77
26 to 26.9 gravity	.82
27 to 27.9 gravity	.87
28 to 28.9 gravity	.92
29 to 29.9 gravity	.97
30 to 30.9 gravity	1.02
31 to 31.9 gravity	1.07
32 to 32.9 gravity	1.12
33 to 33.9 gravity	1.17
34 to 34.9 gravity	1.22
35 to 35.9 gravity	1.225
36 to 36.9 gravity	1.29
37 to 37.9 gravity	1.325
38 to 38.9 gravity	1.36
39 to 39.9 gravity	1.395
40 to 40.9 gravity	1.43
41 to 41.9 gravity	1.465
42 to 42.9 gravity	1.50
43 to 43.9 gravity	1.535
44 and above	1.57

GULF COAST

(Effective April 10, 1930)

Grade "A" all companies	$1.15

Grade "B"

Below 25 gravity	$1.00
25 to 25.9 gravity	1.03
26 to 26.9 gravity	1.06
27 to 27.9 gravity	1.09
28 to 28.9 gravity	1.12
29 to 29.9 gravity	1.15
30 to 30.9 gravity	1.18
31 to 31.9 gravity	1.21
32 to 32.9 gravity	1.24
33 to 33.9 gravity	1.27
34 to 34.9 gravity	1.30
35 to 35.9 gravity	1.33
36 to 36.9 gravity	1.36
37 to 37.9 gravity	1.39
38 to 38.9 gravity	1.42
39 to 39.9 gravity	1.44
40 to 40.9 gravity	1.46
41 to 41.9 gravity	1.48
42 to 42.9 gravity	1.50
43 to 43.9 gravity	1.52
44 and above	1.54

CLASSIFICATIONS OF GULF COAST CRUDE

The Texas Company: GRADE A—Beaume gravity not over 26.0 degrees at 60 degrees Fahrenheit; sulphur not over 0.5 per cent; in distilling 500 cc. of the crude that part of the distillate cut between 65 per cent off and 85 per cent off shall have a pour test of zero or lower. GRADE B—All Gulf Coast heavy crudes which do not meet tests for Grade "A" or for Gulf Coast light.

Humble Oil & Refining Company: GRADE A—All crude conforming to the following tests: viscosity not less than 100 seconds Saybolt at 100 degrees Fahrenheit; sulphur not over .4 per cent; Beaume gravity not over 25 at 60 degrees Fahrenheit. Cold tests of distillates having a viscosity of 1000 seconds at 100 degrees Fahrenheit shall not be over 5 degrees Fahrenheit. GRADE B—Embraces all Coastal crude which does not meet the tests for "A" grade crude.

Gulf Pipe Line Company: GRADE A—Beaume gravity not over 24 at 60 degrees Fahrenheit; viscosity not less than 100 seconds universal Saybolt at 100 degrees Fahrenheit; and sulphur not over 0.4 per cent. The yield of 250 viscosity reduced distillate at 100 degrees Fahrenheit not less than 30 per cent, and this 30 per cent not heavier than 20 Beaume, and its pour test not above zero Fahrenheit. The reduced distillate to be secured by reducing the crude with fire and steam until the bottoms have a flash of not less than 540 degrees Fahrenheit, and not more than 560 degrees Fahrenheit open cup, and the entire distillate obtained in this way reduced to a distillate of 250 viscosity. The 10 per cent cut in the original distillate having an average viscosity of 500 seconds at 100 degrees Fahrenheit to have a pour test not higher than 5 degrees Fahrenheit. GRADE B—Embraces crude which does not meet test for "A" grade.

Sun Pipe Line Company: GRADE A—Viscosity not less than 100 seconds at 100 degrees Fahrenheit Saybolt. Sulphur not over .4 per cent. Beaume gravity not over 25 at 60 degrees Fahrenheit. Cold Test: of distillates having viscosity of 1000 seconds at 100 degrees Fahrenheit shall not be over 5 degrees Fahrenheit A. S. T. M. Method. GRADE B—All Coastal crudes which do not meet specifications for Grade A crude.

REFUGIO

(Effective April 10. 1930)

Below 25 gravity (Heavy)	.85

REFUGIO (Light)

Same as Gulf Coast 25 gravity and above.

PETTUS

(Effective April 10. 1930)

All grades	$1.40

BRENHAM

(Effective March 1, 1930)

All grades	.95

STATE CRUDE PRODUCTION TAXES

Oklahoma—Three per cent of gross value, less royalty interest.

Texas—Two per cent of gross value.

Louisiana—From four to 11 cents a barrel, depending upon gravity.

Arkansas—2.6 per cent of gross market value.

Montana—Two per cent of gross value at well.

Wyoming and New Mexico—production tax based upon state and county assessments.

California—.66443 mills per barrel of oil produced and 17.39 cents per acre on proved oil lands.

WYOMING-MONTANA

(Effective April 11, 1930)

Wyoming

Byron	$1.33
Ferris	1.60
Elk Basin	1.55
Grass Creek	1.55
Rock Creek	1.35
Lost Soldier	1.05
Lance Creek	1.63
Mule Creek	1.20
Notches	.65
Big Muddy	1.38
Osage	1.65
Hamilton Dome	.85
Pilot Butte	1.75
Torchlight-Greybull	1.65
Lander	.80
Rex Lake	1.10
South Casper Creek-Poison Spider	1.00

SALT CREEK

Midwest Refining Company

29 to 29.9 gravity	$ .90
30 to 30.9 gravity	.96
31 to 31.9 gravity	1.02
32 to 32.9 gravity	1.08
33 to 33.9 gravity	1.11
34 to 34.9 gravity	1.14
35 to 35.9 gravity	1.17
36 to 36.9 gravity	1.20
37 and above	1.23

MONTANA

(Effective Feb. 15, 1930)

Sunburst	$1.65
Cat Creek	1.48
Lake Basin	2.20

NEW MEXICO

(Effective April 11, 1930)

Artesia	1.05
Hog Back	1.43
Maljamar	.95
Jal and Lea	*

(*) West Texas price scale used by The Texas Company and Humble Oil & Refining Co.

CANADA

(Effective April 11, 1930)

Oil Springs	2.17
Petrolia	2.10

LOUISIANA-ARKANSAS

(Effective April 11, 1930)

Homer, Haynesville, Caddo, El Dorado, De-Soto and Crichton and Cotton Valley*

Below 28 gravity	$ .87
28 to 28.9 gravity	.92
29 to 29.9 gravity	.97
30 to 30.9 gravity	1.02
31 to 31.9 gravity	1.07
32 to 32.9 gravity	1.12
33 to 33.9 gravity	1.17
34 to 34.9 gravity	1.22
35 to 35.9 gravity	1.255
36 to 36.9 gravity	1.29
37 to 37.9 gravity	1.325
38 to 38.9 gravity	1.36
39 to 39.9 gravity	1.395
40 to 40.9 gravity	1.43
41 to 41.9 gravity	1.465
42 to 42.9 gravity	1.50
43 to 43.9 gravity	1.535
44 gravity and above	1.57

*Shreveport-Eldorado's postings stop at above 40 gravity.

The posting on Cotton Valley is same as Caddo. From 36 to 52 and above the regular gravity schedule is followed.

The Texas Company pays North Texas gravity scale in North Louisiana.

STEPHENS

Below 28 gravity	$ .76
28 to 28.9 gravity	.81
29 to 29.9 gravity	.86
30 to 30.9 gravity	.91
31 to 31.9 gravity	.96
32 gravity and above	1.01

SMACKOVER

Below 24 gravity	$ .90
24 and above	1.05

PERSONAL MENTION-MEN YOU KNOW

J. V. Adams New Head National Oil Scouts

San Antonio.—J. V. Adams, Humble Oil & Refining Company, is president of the National Oil Scouts Association of America for the coming year. He was elected by a unanimous vote at the seventh annual convention held here May 19 and 20, succeeding Ford Turner, Pure Oil Company, San Angelo. J. H. Langston, Sun Oil Company, Dallas, succeeds William Leisk of Shreveport-Eldorado Pipe Line Company, Shreveport, as first vice-president, and G. C. Phillips of The California Company, San Angelo, succeeds Dave Finley, Continental Oil Company, Midland, Texas, as second vice-president. J. E. Beall, new Secretary-Treasurer, is scout for Gulf Production Company in San Antonio, follows Ed Dilley, Atlantic Oil Producing Company, San Angelo district, in that position. W. E. Whitcomb of The California Company, San Angelo, was elected by acclamation chairman of the executive committee, following Pete C. Booth, Humble Oil & Refining Company, Cisco, Texas.

Attendance at the San Antonio convention was small, with only 123 members registered of the 566 paid up memberships; but the seventh annual meeting was highly successful as were the activities of the association throughout the past year. Memberships have increased in the year, from 315 to 566 or nearly 100 per cent.

Ray Phebus, president of Union Gas Company, Thermopolis, Wyoming, and a well known oil operator and geologist in the state, has been elected vice president for Wyoming of Independent Petroleum Association of America. Mr. Phebus is a strong advocate for a tariff on petroleum.

Edward G. Seubert, president of Standard Oil Company, (Indiana), Charles J. Barkdull, treasurer; A. W. Peake, vice president in charge of producing operations; J. W. Curry, director of industrial relations, and Conger Reynolds, director of public relations composed a party of directors of the company to visit the Rocky Mountain district last week. During the presence of the directors, the annual joint general council of the Rocky Mountain division, was held.

L. M. Goldsmith, vice-president of Atlantic Pipe Line Company and chief construction engineer for Atlantic Refining Company with headquarters at Philadelphia, visited the Dallas offices of the former concern late last week in connection with the starting of work on an extension line by the company from Midland, Texas, to the Hobbs field, N. M.

E. C. McCarnes, production superintendent for Transcontinental Oil Company in the West Texas district with headquarters at San Angelo, departed early this week for Tulsa and New York for conferences with officials of the company preparatory to his departure for Roumania. He will co-operate with W. E. Wrather, prominent geologist and engineer of Dallas, who is also leaving this week, in making a survey of the Roumanian properties that are owned jointly by the Transcontinental Oil Company and Standard Oil Company of New Jersey.

Ben M. Bell, 37, president of Pandem Oil Corporation, died May 19 at Muskogee, Oklahoma, while en route his home at Wichita Falls after being stricken with illness during a business trip to New York City last week. Bell was widely known among oil men in the Mid-Continent district, and was employed by Sun Oil Company prior to making his connection with the Pandem Oil Corporation about five years ago. He is survived by a widow and two daughters.

C. A. Mulligan, assistant general superintendent for Humble Pipe Line Company, Houston, has resigned to accept a position as construction superintendent for the Oklahoma Contracting Company, Dallas.

Herbert R. Macmillan, vice president of Macmillan Petroleum Corporation, has returned to Los Angeles from Washington, D. C., where he delivered an address on the California oil situation before the United States Chamber of Commerce.

Early Deane, well known Texas and Arkansas operator and until recently a resident of Los Angeles, has returned to Texas, now having headquarters at San Antonio.

P. M. Longan, vice president of Milham Exploration Company, subsidiary of Mexican Seaboard Oil Company, has extended his Eastern trip to include Europe. Longan has been in bad health for some time and believes the change will prove beneficial.

A. F. Fitzgerald of San Luis Obispo, California, has been elected president of Brookshire Oil Company, operating in the Santa Maria district.

Joseph Martin, independent operator, will open offices in Los Angeles soon after June 1, following his return from New York City.

J. A. Bermingham, vice president of The Texas Company of California, has returned to Los Angeles, following an extended Mid-Continent trip.

New Officers for Tank and Pipe Committees

Dallas, Texas.—Appointment of new national officers for the American Petroleum Institute committee on the standardization of steel tanks for oil storage and committee on standardization on oil country tubular goods has been announced by Carl A. Young, secretary of the institute's division of production.

G. O. Wilson of the Standard Oil Company of California, San Francisco, succeeds Ralph J. Reed, Union Oil Company of California, Los Angeles, as national chairman of the committee on standardization of steel tanks for oil storage. Mr. Wilson formerly was national vice-chairman. Mark W. Daw, Shell Oil Company, San Francisco, will continue as national secretary. Mr. Reed has been appointed chairman of the California district sub-committee to succeed Mr. Wilson. Other appointments affecting the district and other sub-committees will be announced shortly.

John R. Suman, Humble Oil & Refining Company, Houston, has been appointed national chairman of the committee on standardization of oil country tubular goods, succeeding Charles Fitzgerald, The Pure Oil Pipe Line Company of Texas, Dallas, Texas. Mr. Fitzgerald has been made national vice-chairman. Melbert Schwarz, Rio Bravo Oil Company, Houston, has been appointed national secretary to succeed E. P. Bly, Standard Oil Company of California, San Francisco.

Other changes in the personnel of various district and other sub-committees will be announced shortly. It is proposed to create two new engineering sub-committees, one on line pipe, API Stds. No. 5-L, and the other on casing, drilling pipe and tubing, API Stds, No. 5-A.

Ellsworth McGowan, vice president of Kettleman Oil Corporation, which was recently purchased by Honolulu Consolidated Oil Company and Standard Oil Company, is planning an extended vacation before announcing his future plans.

Tulsa.—Two old wells in the Earlsboro area, owned by Amerada Petroleum Corporation and Dixie Oil Company, showed for high output when opened last week under open flow for proration purposes. Grounds 1, SW NW NW 23-9-5, flowed 3365 barrels under gas lift and against back pressure of 125 pounds. Grounds 2, flowed 4070 barrels natural. This well is in the northwest corner of 23-9-5. The well of Tulsa Oil Company, Amerada Petroleum Corporation and Dixie Oil Company, Gross 3, SE SW NW 24-9-5, swabbed 283 barrels from the Wilcox sand, drilled to 4370 feet.

North and West Texas Field Notes

H. H. KING, *Staff Representative, Fort Worth, Texas*

Crane County Wildcat Looking Good for Production

SAN ANGELO, Texas.—Structural conditions are checking uniformly high in the wildcat test of Cranfill Brothers Oil Company et al on the Tubbs ranch in western Crane County, and early this week drilling was under way in white lime at 2620 feet. This wildcat encountered a high salt early last month, and correlations made with logs of nearby tests branded it favorable for production, while the topping of white lime at 2455 feet, or 61 feet above sea level, has strengthened the prospects for a field.

The white lime formation is about 766 feet higher than reported in dry hole located six miles to east, and substantially higher than nearest tests located to the west and southwest.

The Tubbs test has created more interest during the past month because of its production threat than any other West Texas wildcat. Drilling was delayed 15 days account of fishing job at 2420 feet. Gulf Production Company holds a one-half interest in the three sections on which the test is being drilled, with a big leasehold to the west and north, while a number of companies are represented with protection reasonably close in.

A south offset to the lone wildcat oil producer in Andrews County was credited with 3000 feet of oil in hole while drilling in lime at 4380 feet. This semi-completion is being drilled on the A. R. King land through joint operations of Deep Rock Oil Corporation, The California Company and Atlantic Oil Producing Company. The same interests' discovery well on the Ogden land is flowing 160 barrels oil daily at 4428 feet, and two other nearby tests are nearing the oil horizon to complete the initial development program.

Recovering a 12-foot core from shale and sandy-lime formation at a total depth of 8435 feet, Group One Oil Corporation's University 2-B, Big Lake field, resumed drilling with rotary early this week, and promises to be the next deep well completion for the field. Fishing operations on Big Lake Oil Company's University 1-C, which twisted off drill stem at 8658 feet a few weeks ago, have been halted to await arrival of a specially made overshot. The latter is the second deepest test in the country outside of California.

The California Company became the third active producing concern in the Wheat field, Loving County, where the West Texas district derives its only important supply of high gravity sweet oil, during the past week when its John G. Allen 1 flowed 205 barrels oil after shot. This producer is located in the south corner of Section 90, being an offset to Independent Oil & Gas Company's 240-barrel producer on the Jim Wheat land. Allen 1 was shot with 160 quarts in Delaware sand and lime at 4273-4315 feet on May 12, and developed a trace of water after the shot. A second well for The California Company on the east side of the field is due this week from its Reagan-McIlvain 1, which has cemented seven-inch casing at 4113 feet. Pasotex Pipe Line Company has made survey for the routing of a small extension line from its Winkler County-El Paso eight-inch system should The California Company's next test make a good producer. The Wheat field is averaging about 1200 barrels daily of 39-41 gravity oil, and the production is marketed through tank cars by Lockhart & Company, which is the largest producer and operator in the field, and pays 25 cents under Mid-Continent gravity scale prices for the oil.

Warner-Quinlan Company of Texas is credited with having produced 235,000 barrels of oil during the first four months that its University-Davis 7, located on the west side of the Church & Fields area, Crane County, has been on production. This well was completed January 15 flowing an initial of 3240 barrels daily from upper lime at 2871-77 feet, and increased to 4105 barrels on the second day. Water appeared within 10 days after completion, but has not affected the flow of oil, which is now averaging 1135 barrels daily through casing. Offsets later drilled failed to find this upper lime formation prolific, and had to drill to the regular horizon to make average size producers.

A wildcat drilling adventure of a trio of stockmen making their first active step in the oil business promised to bear fruit in Glasscock County late last week when their J. W. Meek 1 developed 300 feet oil in hole from lime at 2977-80 feet, while carrying 2500 feet of water from upper horizon. A string of 5 3/16-inch casing will be set to make a production test. This wildcat is being drilled by Marcus Snyder, Walter Birchfield, both of El Paso, and Edgar Timberlake of Deming, New Mexico. The test is located 2310 feet west and 1650 feet north of the southeast corner Section 7, Block 34, T-3s, Texas & Pacific Railway Survey, being about eight miles southwest of World Oil Company's two pumpers on the McDowell ranch. Snyder and associates have about 800 acres of leases around their promising wildcat operation, which was drilled on contract by S. J. Taylor. The top of the brown lime was logged at 2670 feet, with a surface elevation of 2575 feet.

Atlantic Oil Producing Company's W. T. Shearer 1, a southeast offset to the wildcat producer of Cranfill-Reynolds Company on the Masterson ranch in northern Pecos County, was scheduled to go on pump this week as result of the emptying of about 1500 barrels of oil from lease storage. Buell-Hagan and Atlantic Oil Producing Company joined in building about eight miles of combination two- and four-inch line from this area to a car rack at Grant. Shearer 1 is located on the west line of Section 107, Block 10, H. & G. N. Railway Survey, and was completed last March rated at 75 barrels daily at 1438-52 feet, with a total depth of 1490 feet.

The discovery well on the Masterson land is averaging about 22 barrels oil daily from the same horizon. Phillips Petroleum Company's Shearer 1, located on the southeast line of Section 99, and one mile northwest of the two producers, failed to produce, and has been abandoned with hole full sulphur water at 1675 feet. Rector Oil Company's I. J. Young 1, located in Section 4, Block 3, H. & T. C. Railway Survey, and between the above area and the Pecos River, has been ordered plugged with hole full sulphur water at 2418 feet.

Sun Leases Sold

Wichita Falls, Texas.—Withdrawal of the Sun Oil Company as an oil producing unit in the shallow fields of Archer and Young Counties, North Texas district, is to follow the sale of its six producing leases, bearing 30 pumping wells that yield an average of 250 barrels daily, to Dudley S. Golding and T. B. Cochran, Wichita Falls operators, for a consideration of $235,000. The following leases, aggregating about 1100 acres, were involved: A. E. Brown, M. J. Kunkel, O. Dietrich, A. C. Green, N. E. Andrews and W. T. Richardson. C. L. Escue, superintendent for the Sun Oil Company with headquarters at Olney, Texas, will be retained by Golding & Cochran interests. Sun Oil Company retained its shallow production in Cooke County.

Declare Prairie Dividends

Independence, Kansas. — Dividends have been declared by both Prairie Oil & Gas Company and Prairie Pipe Line Company. Directors of the former met May 14 and declared the regular dividend of 50 cents a share. The dividend of Prairie Pipe Line Company will be $1.25 a share, 75 cents of which is regular and 50 cents extra.

Olney Producers Seek Additional Market Outlets

WICHITA FALLS, Texas.—Congested crude market conditions have put in their appearance in the rapidly developed shallow field centering on the north end of the townsite of Olney, located in northern Young County, and the independent operators are endeavoring to attract additional crude buyers to relieve the situation. Pipe line companies connected to the field are setting a limit on their daily runs as production continues to mount through the completion of numerous prolific wells in the 1050-1100-foot sand horizon. The field is entirely controlled by independent operators, and a number of this group have offered to make contracts calling for the delivery of all their production over a period as an inducement for other buyers to extend their lines into the field. The crude averages about 40 gravity, and under normal conditions would be in popular demand with crude purchasers.

Olney townsite and acreage adjoining to the north and west have been the largest single source of oil completions in the North Texas district since the field was uncovered early in April by J. J. Perkins-L. H. Cullum and others on the E. J. Dunagan land with an initial yield of 380 barrels daily at 1055-77 feet. Ten completions have since been scored on this discovery tract, ranging up to 500 barrels daily. Tom Hunter Oil Corporation's Bloodworth 1-B was the largest completion made during the past week, having flowed 400 barrels initial at 1046-75 feet. Staley-Wynne & Company's Cooper 1 flowed 200 barrels natural at 1042-75 feet. The oil sand is unusually thick in this field, and uniformly level, while the shallow depth permits the drilling of two or three wells with one rig within a month.

Sixteen tests are drilling at top speed within a radius of two miles of the heavy producer completed April 8 by J. P. Nash, R. F. Windfohr and associates on the McCloud farm, located northeast of Graham, but several weeks will be required for any one of these tests to reach its goal. McCloud 1 is flowing about 3600 barrels high gravity oil and a like amount of water after registering an estimated initial flow of 23,000 barrels of pipe line oil and 10,000,000 cubic feet of gas from sandy lime at 3752-59 feet. Prairie Pipe Line Company and Texas Pipe Line Company are running this oil for purchase. L. G. Bradstreet Company and Gulf Production Company's Hinson 1, a southwest offset to the big well, encountered oil and gas production in the 2100-foot horizon late last week and caught fire, but has replaced the damaged equipment to resume operations. Ten of the tests making a try for production in the prolific lime horizon are drilling below 2000 feet.

Pumping equipment is being installed for a production test on the wildcat test of Lloyd Oil Corporation and associates on the Jacobs farm, located near Burns City, in southeastern Cooke County. This test has 650 feet of oil in hole from sand at 1576-78 feet, with a total depth of 1629 feet. In the southwestern part of the county, the wildcat test of Gulf Production Company on the J. T. Donald land, John Guffey Survey A-1545, failed to develop commercial production from sand at 2894-2900 feet after bailing 41 gravity oil with water; and casing was being lowered early this week to deepen. This test is contracted to go to 4000 feet.

Finley-Brown Field Still a Market Threat

Amarillo, Texas.—Contributing 8500 barrels of new production during the past week from five flowing wells, the Finley-Brown field, Gray County, remains as a market threat for the Panhandle district, with scores of proven locations in the flush area scheduled to be drilled. The extent of oil production in this field to the north and northeast of the north fork of the Red River has not been determined. Indications are that the field will be carried over the summer as a major source of high gravity crude, while the active development program is in the hands of companies fully protected with trunk line systems, or nearby refineries, with only a few exceptions. Gray County's production advanced 2750 barrels during the past week through having maintained an average of 71,010 barrels daily.

Sun Oil Company's Coombs-Worley 1, located in the SWc SE Section 35, paved the way for further extensions to the northeast by recording an initial flow of 2400 barrels natural from granite wash formation at 2845-55 feet. About 25,000,000 cubic feet of wet gas accompanied this flow of oil. On the fifth day after completion this well gauged 1835 barrels. Some difficulty was encountered in landing a pipe line connection, but arrangements were made for Prairie Pipe Line Company to run the oil. Magnolia Petroleum Company's Fee 5, located 990 feet from south and west lines of Section 14, and about one half mile northeast of the above producer, developed 30,000,000 cubic feet of gas at 2350 feet, thereby indicating an important extension for the field should the test be carired to the oil horizon. However, this test was drilled purposely for dry gas productoin, and may be put on the line for an indefinite period before making a try for oil production.

Humble Oil & Refining Company contributed the largest oil producer for the Finley-Brown field during the past week when its Coombs-Worley 2 made 3800 barrels initial at 2790-2808 feet. It is a larger well than two offsets completed by other companies the week previous. Phillips Petroleum Company's Coombs-Worley-Foxx 2, a north offset, made 1600 barrels initial at 2830-45 feet, but lost benefit of the heavy flow of upper gas, which amounted to 55,000,000 cubic feet at 2750-75 feet, by cementing 6⅝-inch casing at 2800 feet.

Drilling Activity at Hobbs Field After Opening of Outlets

ARTESIA, New Mexico. — Progress on drilling tests in the Hobbs field is advancing at a faster pace as contractors become more familiar with drilling conditions, and new records for elapsed time in reaching the top of the brown lime formation near the 2800-foot level are being established. Operators are desirous of speeding up completion of their tests because of completed wells being opened up and placed on steady production. The northwest outpost well of Humble Oil & Refining Company on the D. A. Bowers Federal permit was allowed to produce an average of about 7000 barrels daily during the past week from lime at 4061-4106 feet; and Atlantic Pipe Line Company has made connections with wells in the older section of the field to run oil into its two completed 55,000-barrel tanks.

A record for the Hobbs field is believed to have been established by Champlin & Bass, Inc., Tulsa, in drilling Tidal Oil Company's W. D. Grimes 1 to broken lime formation at 2713 feet, where a string of 9⅝-inch casing was run May 17 to be cemented with 600 sacks. This test spudded April 30, and took time out to cement 12½-inch pipe with 200 sacks at 236 feet. It is located one mile due east of the big well on the Bowers permit. Drilling problems multiply rapidly in the northwest portion of the field below the top of the brown lime formation, and terrific rock pressure accompanying comparatively light flows of gas cause repeated blowouts on rotary drilled holes, while no cable tools have been used entirely to penetrate the troublesome horizon, since the only completion, which is on the Bowers land, was drilled with rotary.

Prairie Oil & Gas Company's three tests drilling on the south end of the Bowers field, where very little gas is encountered above the oil producing level, have tapped the lime with small showings of gas, but not in sufficient volume and pressure to necessitate the running of casing. This company's Crump 1 picked up lime at 2890 feet, late last week was drilling below 3150 feet, while Crump 2 was drilling at

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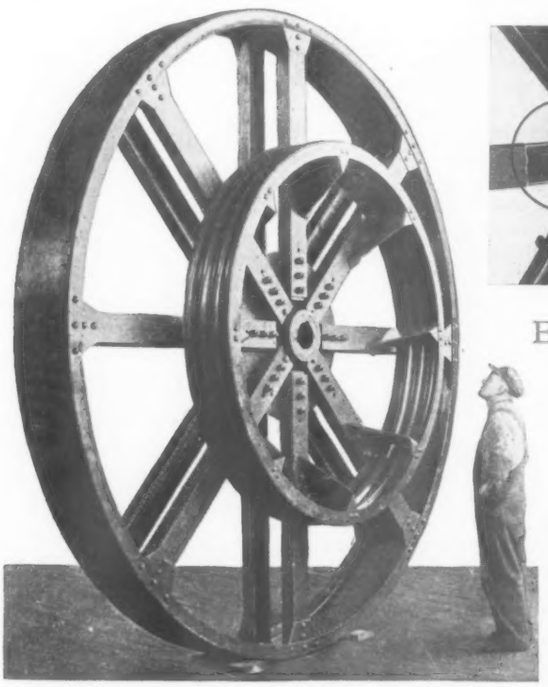

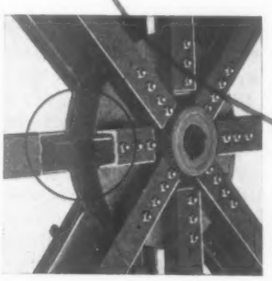

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3055 feet, with top of lime at 2892 feet. The same company's Selman 1 topped brown lime at 2897 feet, followed by minor gas production, and at last reports was drilling at 3125 feet. These three tests were spudded about April 21, and promise to be among the first of the new group of completions carded for the field.

Texas Pacific Coal & Oil Company's State 1-G, located on the northwest tip of the active area, was drilling below 2960 feet early this week with an estimated flow of 3,000,000 cubic feet of gas under control; Eastland Oil Company has the drilling contract on this test. Amerada Petroleum Corporation's McKinley 1, a southeast diagonal offset to the above, was drilling below 2830 feet early this week, while Shell Petroleum Corporation's McKinley 1, an offset to both, had reached a depth of 3640 feet. The latter's State 1, Section 32-18s-38e, has been drilled to 3850 feet.

Repeated gas blowouts on Gypsy Oil Company's Grimes 1, Section 32-18s-38e, in trying to penetrate heavy gas pressure at 2750 feet is reported to have resulted in about 600 tons of mud being consumed, and the most troublesome gas horizon has not been invaded.

Deepening of C. A. Fisher and H. W. Lowrie, Jr.'s wildcat test on State land, Section 11-18s-36e, to 5199 feet has been followed by a few small flows of oil, which tests 37 gravity. This well was reported last week as having opened up a new producing area about nine miles northwest of the Hobbs field, with top of sandy-lime oil bearing formation at 5148 feet. A string of 6⅝-inch casing is to be set to make a production test.

Shipments of pipe for Atlantic Pipe Line Company's 78-mile eight-inch extension line from Midland, Texas, terminals to the Hobbs field were scheduled to start from the mill late last week. The company plans to be at work in welding this line by the close of May.

East Hackberry

Houston.—Calcasieu Oil Company has completed Watkins 18 on the south side of the East Hackberry field, Cameron Parish, Louisiana, as the second relatively shallow producer of the dome. It came in yielding 75 barrels pipe line oil daily from sand at 2738-51 feet. Corrected gravity of the crude is 21.7.

Calcasieu Oil Company's Caldwell 5 on the south flank, now drilling, is the deepest test of the area. Late last week it was drilling sand and lime at 6750 feet. It is in Section 38-12s-10w.

Houston.—Empire Gas & Fuel Company has abandoned J. T. Boyd 1, at San Felipe, Austin County, in anhydrite at 4110 feet, after first encountering cap rock at 3825 feet. This test was on the west side of the dome. Kirby Petroleum Company's J. Davis 2 on the south side of the dome, is drilling sandy lime at 3055 feet.

New Depth Record Made at Barbers Hill

Houston.—A new record for deep production in the Texas Gulf Coast has been established through completion of Humphreys Corporation's A. E. Barber F-1 at Barbers Hill as a flowing well at total depth of 6492 feet. Following setting of two joints of 4¼-inch screen, the well was swabbed in May 19 and began flowing through three-inch tubing at the rate of 1000 barrels daily, pinched in with one five-eighths-inch choke, and registering pressure of 240 pounds. Gravity of the oil is 34, corrected.

This well is a 160-foot southeast offset to Humphreys Corporation's Kirby A-8, deep sand discovery well of the northwest flank of the dome, and it is the second producer completed in that deep zone. In fact, it is the only test, aside from the discovery well, yet drilled to the deep sand; for all acreage within a wide radius is held by Humphreys Corporation, eliminating competitive drilling, and that company's holdings, furthermore, are in large leases, and only the one offset was required following completion of the discovery well.

While the new producer is only a short distance from the first deep well and apparently as near, if not nearer, to the dome, it encountered the producing oil sand at a greater depth. Kirby A-8 is producing from lower Oligocene sand encountered at 6397-6416 feet. It came in January 4, 1930, for an initial flow of 10,262 barrels per day of 34 gravity oil, and is still flowing steadily, with over 600,000 barrels total recovery to its credit.

At the time it was brought in, Kirby A-8 was the deepest producing well in the Texas Gulf Coast, although two deeper producers had been completed in the Gulf Coast of Louisiana at the Jennings field. The record of the Barbers Hill was exceeded when Union Producing Company's Rose Lambert A-1 at Refugio came in April 1, 1930, producing around 160 barrels of high gravity oil daily at 6456-6468 feet, but that well flowed only a few days, and only produced several hundred barrels of oil. It is now temporarily abandoned. The new well of the Humphreys Corporation, being over 20 feet deeper than the Refugio well, again gives Barbers Hill clear claim to the distinction of having the deepest producer of Coastal Texas. Incidentally, the deepest test ever drilled in the Texas-Louisiana Gulf Coast territory was on the south edge of Barbers Hill. It was Yount-Lee Oil Company's Chambers County Agricultural Association 4, abandoned at 8150 feet.

While the new Humphreys Corporation producer was swabbed in on May 19, it had been completed originally nearly a week earlier. Prior to the first completion it was drilled to a total depth of 6487 feet, and after screen was set it flowed at the rate of 900 barrels daily through three-inch tubing, producing through one five-eighths-inch choke, showing pressure of 130 pounds, and temperature of the crude at the well being 80 degrees. However, the well quit flowing after a few hours, and it was decided to reset screen. In the meantime the hole was deepened five feet, but it only took in hard sand and shale.

While the above well of Humphreys Corporation has been monopolizing interest on the northwest side of the field, another test of the same company is a center of attention on the north flank of the dome in virtually wildcat territory. It is Morgan 1, located approximately one mile west of Humphreys Corporation's Kirby C-1, the nearest deep producer. Sand and shale with oil showings were logged from 6320 to 6404 feet, the bottom of the hole being at the latter depth. Casing was cemented at 6143 feet, and on May 20 screen was being set. Anticipating a good producer, the owners of the well have erected a battery of steel tanks to take care of crude which it may yield.

Yount-Lee Oil Company's Zadie Fisher, wildcat deep test on the west flank of the dome, was drilling sticky shale at 6836 feet late last week. That well is 6400 feet south of Humphreys Corporation's new deep well, and about the same distance west of established deep production on the south flank of the field.

Several wells were completed on the east side of Barbers Hill the past week. Mills Bennett Production Company's Gulf-Higgins 2 came in at 5245 feet flowing at rate of 600 barrels daily through one-half-inch and five-eighths-inch chokes, producing 27.5 gravity crude. Sun Oil Company's McKinney Fee 4 was swabbed and began flowing 95 barrels net oil, 27.4 gravity, daily along with 25 per cent b.s. and water, total depth of the well being 5304 feet.

A miniature cyclone swept through the busy east side of Barbers Hill field May 17, injuring five men, wrecking 17 derricks which were over producing or drilling wells, and did other damage. Because of the storm much work had to be directed to removal of the debris and rebuilding of derricks, and regular field operations were temporarily forced into the background.

Two New Locations Made in Mississippi

Jaskson, Miss.—Two new locations were made during the last week in the Jackson district, including Hinds and Rankin Counties. Love Petroleum Company, which completed Mendoza 1, Section 11-5-1e, as Jackson's first commercial gas well at total depth of 2447 feet in chalk rock, is rigging up Mendoza 2, NW NW Section 12-5-1e. It is 2500 feet northeast of Mendoza 1. At Mendoza 1, derrick has been torn down and the rig is being moved off. It gauged 28,569,902 cubic feet. The other new location is Love Oil & Gas Company's Gordon 1, Section 2-5-1e.

South of Jackson, Dome Oil & Gas Company has drilled plug after setting nine-inch casing at 818 feet and is coring at 830 feet in Elton 1, Section 5-4-1e. Louisiana Gas & Fuel Company is drilling igneous material and chalky lime at 3125 feet in Harris 1, Section 35-6-1e. This test hit the base of the chalk at a depth of 2904 feet.

Gulf Coast Field Developments

JACK LOGAN, *Staff Representative, Houston, Texas*

Deep Drilling Is Assuming Large Proportion at Refugio

HOUSTON.—Deep drilling is gradually assuming larger and larger proportions at Refugio, and at present 23 out of a total of 43 rigs in operation in the field are engaged in putting down wells to test the sands found below 5400 feet. The increase in deep drilling has been accompanied by a proportional decrease in the 3700-foot sand development, and so there has not been any material change in actual number of drilling operations for the past several months. The shallower tests that are now being drilled are located for the most part in or adjacent to the town lot area on the east flank of the old gas field. That area has yielded a large part of all Refugio production, with wells closely spaced, one at the center of each block over the west portion of the townsite. Nevertheless, there still remain some potentially productive town blocks which have not yet been drilled, some within proven territory and others in semi-proven territory just outside the producing area.

The most interesting, and perhaps most significant, deep test in the field at present is Moss 1 of Mission Drilling Company of Texas, located at the center of Town Block 110. For although it is almost within the area on which the 3700-foot wells are located, being only about 1200 feet to the eastward, it gives promise of developing commercial production from gas and high gravity oil sand found at 6408-16 feet. If it does so, it will open possibilities for similar deep production beneath the 3700-foot zone—production which might be obtained by deepening shallower producers.

Mission Drilling Company made a drill stem test in Moss 1 at the 6408-16-foot horizon a little over a week ago, and the test showed one fourble of high gravity oil and two fourbles of mud and fresh water. Following the test a string of casing was set and cemented. This well is 2200 feet southwest of Union Producing Company's O'Brien 1, discovery well of the 5500-foot producing sand, and it is 3000 feet west and 4000 feet south of Union Producing Company's Rose Lambert 1-A, which yielded some 42 gravity oil from 6456-6468 feet, but which later quit producing, and was temporarily abandoned. The present deep test is 50 feet higher structurally than Rose Lambert 1-A, and it is 60 feet higher than Independent Oil & Gas Company's O'Brien 1, which also encountered the deep sand but which failed to develop commercial production. It is 4800 feet northwest of Rose Lambert 1-A, and 7200 feet due north of the present deep test of Mission Drilling Company.

Another 5500-Foot Sand

During the past week another well was completed in the 5500-foot sand. Including the above mentioned Rose Lambert 1-A, this new well, Union Producing Company's O'Brien 3-A, makes a total of 14 producers completed at Refugio in the three sands at 5500, 5800 and 6500 feet. It was the twelfth of the 5500-foot wells completed. It is a north offset to Saxet Oil Company's Ryals 1, and is located in the south portion of the deep sand area. Following setting of 30 feet of screen at total depth of 5437 feet it came in flowing 300 barrels of high gravity pipe line oil daily, registering working pressure of 900 pounds. The flow was limited with a one-quarter inch choke. Top of the sand was at 5414 feet; 8¼-inch casing was set at that depth; and in completing the well a string of tubing was run.

On the north end of the shallow area Sun Oil Company completed Buckley 4 for 175 barrels initial production through one-quarter-inch choke from sand logged at 3663-87 feet.

The failure of Houston Gulf Gas Company's M. F. Lambert 2 to make a flowing well indicates that worth-while production from the 5800-foot sand will be limited to territory west of it. Having drilled into oil showing sand to total depth of 5891 feet, it is standing with 5000 feet of fluid in the hole, but has no gas pressure and will not flow. This well is 2000 feet due east of the same company's M. F. Lambert 1, discovery well of the 5800-foot sand, and still the only producer from that horizon. The sand found in No. 2 is not as good as that in No. 1, being tighter. M. F. Lambert 1 was completed February 25, 1930, and it has already produced approximately 100,000 barrels of oil. It is a virtual wildcat producer, its location being almost two miles northeast of the 5500-foot wells supplying the nearest other production. The producing horizon is at 5879-5884 feet.

Other 5800-Foot Tests

Several wells are now being drilled to attempt to obtain production from the 5800-foot sand. Houston Gulf Gas Company's M. F. Lambert 3, which is 1000 feet due south of No. 1, was drilling late last week at 4714 feet in sticky shale. Houston Oil Company's Rose Lambert 1, direct west offset to the producer, was drilling sandy shale at 3741 feet; its Rose Lambert 2, located 700 feet due south of No. 1, and a direct offset to Houston Gulf Gas Company's M. F. Lambert 3, is rigging up. Houston Oil Company's O'Connor 1, a test 5500 feet southeast of the producer, M. F. Lambert 1, is drilling below 200 feet. Independent Oil & Gas Company's M. F. Lambert 1, direct east offset to Houston Gulf Gas Company's M. F. Lambert 2, and consequently 2500 feet due east of the producer, was drilling late last week at 5513 feet in lime. T. P. Morgan's St. John 1, located 1800 feet southeast of the producer, was drilling sticky shale at 4380 feet.

Various tests are nearing completion in the 5500-foot sand. Union Producing Company's O'Brien 4, a north offset to Moody-Seagraves Producing Company's Mission-O'Brien 1, producer, has 8¼-inch casing cemented over oil sand found at 5427-46 feet, and a 21-foot joint of screen has been set in the sand. Union Producing Company's Shelton 2, a virtual wildcat, located about mid-way between the 5500-foot production and the 5800-foot semi-wildcat producer, being 6000 feet east and a little north of Union Producing Company's O'Brien 1 and 6500 feet south and west M. F. Lambert 1, is drilling sandy shale and lime at 4687 feet. Aside from the above two wells, Union Producing Company has four other deep tests under way. Mitchell 3, located 600 feet east of No. 2, a producer, is drilling sticky shale and lime at 5390 feet; Mitchell 4, located 1200 feet east of No. 2, has cemented 12½-inch casing at 1225 feet; Powers 3, which is 300 feet west of the Saxet Oil Company producer, Ryals 1, is coring shale at 5415 feet; and Powers 4, a north offset to the producer, Pearson Properties' Ryals 1, is drilling sticky shale at 3763 feet.

Moody-Seagraves Producing Company's Mission-O'Brien 2, which is 400 feet east of the producer, No. 1, is drilling hard sand at 4292 feet.

Houston Oil Company's Fannie Heard 1-A, Block 62, has cemented 13⅜-inch casing at 500 feet; Kay 1, which is 1500 feet west and a little north of Union Producing Company's O'Brien 1, cored sandy shale with oil show at 5086-89 feet, and drill stem test will be made; West 1, Block 67, has cemented 13⅜-inch casing at 467 feet.

Independent Oil & Gas Company has two interesting deep tests drilling. Helen Reilly 1, located in the north part of the 3700-foot sand area, in Lot 3, Farm Block 16, will test the deep sands in that portion of the field, and it has been reported that it may be drilled as deep as 10,000 feet. It was recently drilling sand at 5433 feet. That company's Mercy Academy 1, a west offset to Union Producing Company's producer, Mitchell 2, will make a

drill stem test in oil-showing sand at 5445-50 feet.

Pearson Properties, Incorporated, has cemented 10-inch casing at 479 feet in Ryals 1, which is 500 feet east and a little north of No. 1, a producer.

The average daily crude production at Refugio during the week ending May 17, 1930, was 39,600 barrels, according to the estimate of the American Petroleum Institute. The daily average for the previous week had been 38,850 barrels, and for the week before that 37,800 barrels.

Jefferson Davis Parish

Houston.—Pure Oil Company has abandoned A. F. & W. L. Day 1, the first test of salt dome prospect which it found by seismograph in 1929 near Welsh, Jefferson Davis Parish, Louisiana. The wildcat was abandoned in hard sandy shale at 5216 feet. Its location was in Section 1-10s-5w, about 1½ miles south and a little west of Welsh. The prospect is designated as the Bayou Lacassine or South Welsh area.

Complete Two Prolific Wells in Fault at Darst Creek

HOUSTON.—Since the new proration schedule went into effect at Darst Creek on May 16 several wells have been completed, including two additional prolific producers from chalk formation along the subsurface fault on the west edge of the north-central portion of the field.

Aside from one other fault well, those two new producers from the chalk came in as the largest producers so far completed in the field. One of them is Gulf Production Company et al's Dix-McKean 3-A, which flowed on proration test at the rate of 22,300 barrels daily from Austin chalk at total depth of 2223 feet, and the other is Louisiana Oil Refining Corporation's Dix-McKean 3, which flowed at the rate of 25,500 barrels daily on proration gauge, producing from Austin chalk at total depth of 2301 feet. Both of these wells were drilled directly into the fault, like Magnolia Petroleum Company's M. E. Roamel 1, the celebrated "gusher," which came in the latter part of March, flowing for an hour on proration gauge at the rate of 41,928 barrels daily from total depth of 2317 feet, producing from Austin chalk and from crevices at the top of that formation.

The new fault well of Louisiana Oil Refining Corporation is a direct northeast offset to that of Gulf Production Company et al, and the latter, in turn, is approximately 1200 feet northeast of the original "gusher" of Magnolia Petroleum Company. The new chalk wells show that the fault swings sharply to the eastward in the vicinity in which they are located.

In that same portion of the field, but to the east of the fault, where production is obtained from the regular producing formation, the Edwards lime, there were also several completions since the middle of May. Louisiana Oil Refining Corporation's T. Dix 5, located about 600 feet southeast of the Magnolia Petroleum Company "gusher," came in flowing 1500 barrels daily at 2578 feet, and the direct north offset to it, Gulf Production Company et al's Dix-McKean 2-A, has casing cemented at 2517 feet. Abercrombie et al's Dix-McKean 7 (formerly 2) came in producing 1800 barrels daily at 2573 feet. It is a southeast offset to Gulf Production Company et al's Dix-McKean 2-A. Abercrombie et al's Dix-McKean 8 (formerly 4) had initial production of 2020 barrels at 2551 feet.

Empire Gas & Fuel Company's Knoblock 2, located too far west, drilled to the down-throw side of the fault, lost rotary returns in chalk cavity at 2633 feet, and has been abandoned.

New Proration Schedule

Eight wells having been completed at Darst Creek during the first half of May, the new proration schedule, effective May 16 through May 31, shows a total of 128 producing wells in the field, with combined potential yield of 245,864 barrels daily. Those 128 wells were on 93 of the 20-acre proration units, the total proven area of the field on May 16 being therefore, 1860 acres.

Based on a limitation of output of the field to the market outlet provided by the four pipe line companies serving producers participating in the proration program, the allowable production of the whole field is now 22,295 barrels daily, or about 11 per cent of the potential.

When the previous schedule went into effect May 1 there were 120 completed wells in the field, with combined potential of 235,884 barrels daily, and combined allowable production of 23,829 barrels daily. Those 120 wells were on 92 of the 20-acre units. Consequently, seven of the producers completed the first half of May were on units which already had producing wells, and only one new 20-acre unit was added; namely, that on which Louisiana Oil Refining Corporation's above mentioned new well, Dix-McKean 3, was being completed at the beginning of the new proration period.

The seven wells added on already productive units included several which were completed immediately before the new schedule was made out, as follows: Abercrombie et al's T. Dix 4 (formerly called 3), which gauged 2190 barrels daily from Edwards lime at 2567 feet on proration test; Humble Oil & Refining Company's Sallie Wilson 6, a 720-barrel well at 2640 feet; the same company's Yates Wilson 5, initial production 644 barrels at 2637 feet. The remaining four wells participating in the market outlet for the first time on May 16 included Magnolia Petroleum Company's M. E. Roamel 2, Sun Oil Company's Knoblock 7, and The Texas Company's Dallas Wilson 7 and 8.

Three Wells Go Dead

While new wells were being completed at Darst Creek during the past three producers in the central portion of the field suddenly stopped flowing and will be put to pumping. They are on the Knoblock land on leases of Gulf Production Company, Sun Oil Company and Empire Gas & Fuel Company. All are near Empire Gas & Fuel Company's Knoblock 2, mentioned above as having been plugged and abandoned at 2633 feet after encountering cavity and losing returns.

In the "Appling area," one mile northeast of the main Darst Creek field, Cranfill-Reynolds Company has completed R. C. Appling 2 as a 500-barrel producer from Austin chalk at 2496 feet. That well was originally completed for 200-barrels initial production at total depth of 2250 feet, but it was decided recently to drill it deeper. There are five producing wells in the Appling area, all having been drilled directly into the fault.

Several interesting tests are in progress outside of the main field. To the north Magnolia Petroleum Company's A. J. Manford 1 is drilling Georgetown lime at 2995 feet. The same company's M. T. Klein 2, east of the main field, has cemented 6⅝-inch casing in Georgetown lime at 2573 feet.

POTENTIAL AND ALLOWABLE PRODUCTION AT DARST CREEK

Producer—	Total wells	No. units	Total Potential	Av. Potential per unit	Unit allowance	Potential allowance	Total daily allowance
Abercrombie et al	2	1	4,170	2,085	100	150	250
Empire Gas & Fuel Co.	6	4	8,475	7,295	400	526	926
Gulf Production Company	21	16	55,854	50,249	1,600	3,627	5,227
Humble Oil & Refining Co.	27	19	27,377	21,526	1,900	1,554	3,454
Kirby Petroleum Company	1	1	549	549	100	40	140
Louisiana Oil Refg. Corp.	9	8	18,454	15,779	800	1,139	1,939
Magnolia Petroleum Co.	15	9	57,837	30,889	900	2,229	3,129
Penn Oil Company	1	1	465	465	100	34	134
Stroube & Stroube	1	1	360	360	100	26	126
Sun Oil Company	7	4	18,522	9,921	400	718	1,116
The Texas Company	34	26	51,477	38,921	2,600	2,808	5,408
Trinity Drillers	4	3	2,324	2,013	300	146	446
Total	128	93	245,864	180,052	9,300	12,995	22,295

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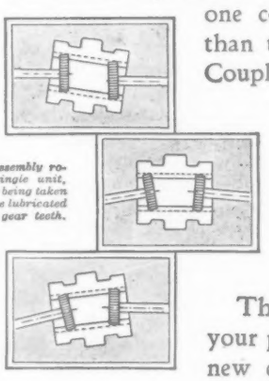

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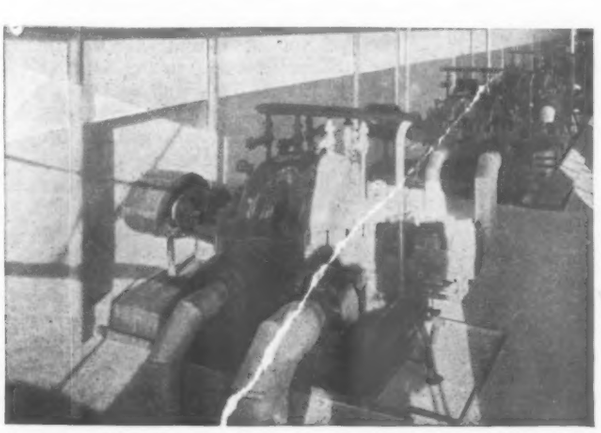

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Oklahoma--Kansas Field Notes

FLOYD L. SWINDELL, *Staff Representative, Tulsa, Oklahoma*

Four Prospective Oklahoma Oil Pools Placed Under Proration

TULSA. — Four prospective Oklahoma oil pools have been placed under proration restrictions in anticipation of what flush output they may add to the Mid-Continent total during the summer. Each has one or more producing wells, with other tests drilling. The output of these is now of little consequence and only further drilling can classify them as to their consequence. In two instances, however, the first wells are flowing only one-fourth of initial production; while with the other two, producing restrictions will go into effect as soon as discovery values have been established. In one instance a drilling agreement will forestall intensive development.

The areas are:

Orlando—In Sections 5 and 8 of Township 19n, Range 1w, Payne County, where two wells are producing on a community block.

West Chandler—In Sections 7, 8 and 17 of Township 14n, Range 4w, Lincoln County, where two wells drilled deeper have uncovered production in the Viola and Simpson formations.

Douglas—In Section 10-20-4w, Garfield County, where Continental Oil Company and Barnsdall Oil Corporation, have one well flowing from the Wilcox sand.

Wanette, where Bullock Oil Corporation has one well in Section 32-6-3, flowing from the Cromwell sand through a rip in the casing.

Unit Development

Orlando, in addition to its importance as an oil pool of consequence, is interesting because it is under development as a unit. Reiter Foster Oil Company began drilling in the area in 1926 in an effort to find Wilcox production. After water had been found, it was plugged back to the Meisner dolomite and made a small well. It was in 1929 that the acreage of Reiter Foster Oil Company, Prairie Oil & Gas Company, Tidal Oil Company and Continental Oil Company, was pooled into a block of 640 acres, half in the south half of Section 5, and half in the north half Section 8, Township 19n, Range 1w.

The first well, Kinnerman 1, SWc 4-19n-1w, after finding water in the Wilcox, was plugged back to the Meisner horizon, total depth 4783 feet, and had initial production of 80 barrels. It is still producing 35 barrels daily.

The first well drilled under unit development was Finnell 1, c NE of the NW of 8-19n-1w. It was spudded December 3, 1929, and completed April 16, 1930. The top of the Misener was found at 4380 feet and at 4837 feet the well started flowing 75 barrels an hour. The producing formation in this well is a true sand, while oil in Kinnerman is coming from a dolomite.

Finnell 1 was rated as a 1200-barrel well and went under proration, being allowed to produce 300 barrels daily. It is flowing through a three-quarter-inch choke.

Two other wells have been started on the unit block. Rosa Finnel 1, SE SW 8-19n-1w, which has been spudded; and Reynolds 1, NW NE 8-19n-1w, which is drilling below 1500 feet.

Minnehoma Oil Company has started drilling in Section 7-19n-1w NEc SE NE. This test is on a lease adjoining the unit block.

Although drilling thus far has failed to uncover oil production in the Wilcox sand, that formation is still the object of development. Geological conditions are such that the Wilcox is looked upon with favor.

Drilling Deeper

West Chandler has come into prominence through deeper drilling of old producing wells. Magnolia Petroleum Company was successful in two instances. One well producing from the Wilcox, while the other production is thought to be from the Viola lime.

Magnolia Petroleum Company's Benedict 2, NE SE NW 7-14-4 drilled into the Wilcox at 5071 feet and was completed at 5077 feet for open flow production of 3485 barrels. Because of water trouble the well was pinched to 1825 barrels. The oil is 39.5 gravity.

Although Magnolia Petroleum Company's Decker 2, SWc SE of 8-14-4 is producing about 1800 barrels daily on the swab, it is not yet listed as a completion. The Viola lime is credited with this production. The formation was entered at 4612 feet and total depth is 4675 feet.

These two wells have resulted in development, which consists in the deepening of old and shallower wells and the drilling of other tests. This development is in Sections 7, 8 and 17 of Township 14n, Range 4e.

Drilling Restrictions

As soon as discovery value has been established the output of these wells will be restricted under proration. Meanwhile the drilling occasioned by the two wells has been restricted. Magnolia Petroleum Company, Prairie Oil & Gas Company and T. B. Slick are holders of substantial acreage in the area and have decided to limit drilling to one string of tools to each 40 acres.

Wells drilling in the area are:

Coline Oil Company's Telford 1-A, NWc SE 7-14-4, dry 2300 feet.

Magnolia Petroleum Company's Benedict 1, (OWD) NW Section 7-14-4, fishing, 3344 feet.

Prairie Oil & Gas Company's Norton 2, SWc NE 7-14-4 (OWD) dr 3388.

T. B. Slick's Benedict 1, SEc SW 7-14-4, dr 2265.

Magnolia Petroleum Company's Decker 2, SWc SE 8-14-4, swabbing 1800 barrels daily, td 4675.

Magnolia Petroleum Company's Freeman 2, NEc SE SE SE 8-14-4, dr 2110.

Magnolia Petroleum Company's Gilliam 3, SEc SW 8-14-4, dr 950 ft.

Magnolia Petroleum Company's Staubus 3, NEc NW SW SE, ur 6-inch casing, td 4930.

Magnolia Petroleum Company's Staubus 4, SWc NW SE 8-14-4, dr 4695.

T. B. Slick's Fee 1, SWc 9-14-4, dr 4370 feet.

Magnolia Petroleum Company's Henry 1, SWc NE NE 17-4-4, dr 2650 ft.

Magnolia Petroleum Company's Myers 2, NEc 17-4-4, dr 3200.

Magnolia Petroleum Company's Wagner 2, SEc NW NE 17-4-4, dr 2760.

Magnolia Petroleum Company's Wagner 3, NWc NE 17-14-4, dr 2245.

Garfield County

Only one well is producing in the Douglas area. Continental Oil Company and Barnsdall Oil Corporation's Brown 1 center of the north line of the southwest quarter of 10-20-4w is gradually being pinched to 170 barrels daily, one-fourth its normal output. This well is 5860 feet deep and is producing from what is believed to be the Wilcox.

The north offset to this well has been started by Continental Oil Company. In the NWc NE NW of Section 15-20-4w, T. B. Slick Oil Corporation is drilling a test.

Intensive drilling has followed the completion of Bullock 1 completed by the Payne Drilling Company in the SEc NE of Section 22-6-3. This well was drilled to the Wilcox sand, where it encountered water. It was plugged back and the casing ripped at 3515 feet at the Cromwell sand, which since has been flowing about 850 barrels daily. The unusual condition of the completion stamped the well as a freak at first. But its consistent flow has stamped it as something permanent. The well is near the town of Wanette and that name has been given to the prospective oil field.

Drilling wells in the area are:

Bullock Oil Corporation's Bullock 2, SWc SE NE 22-6s-3e, cellar.

Bullock Oil Corporation's Bullock 3,

NEc SE. Ne, 22-6s-3e, rigging up rotary.

J. A. Hull Oil Corporation's Townsend 1, NEc S. E. 22-6s-3e, lcn.

Transcontinental Oil Corporation's Witcher 1, SEc NE NE 22-6s-3e, lcn.

Twin State Oil Company's Archer 1, NEc SE 22-6s-3e, dr 800 ft.

Indian Territory Illuminating Oil Company's Butler 1, SWc NW 23-6s-3e, dr 2100.

Indian Territory Illuminating Oil Company's Butler 2, NWc SW NW, 23-6s-3e, rigging up.

H. F. Wilcox Oil & Gas Company's Warren 1, NWc SW 23-6s-3e, dr 2500 ft.

Sikes et al's Cook 1, SWc NW NE 36-6s-3e, rig.

As soon as the second well of this area is completed, it and the present well will be put under proration.

Oklahoma City Pool May Be Extended Northwest

Tulsa.—Within the next 15 days, the northwest end of the Oklahoma City pool will probably be extended one mile or the productive limit will be defined in that direction. Wirt Franklin's Wright 1, NE NE NW, Section 2-11n-3w, at last report was drilling below 6200 feet. This test one mile northwest of the same company's Theimer 1, SEc, Section 2-11n-3w, the most northwesterly producer, is 39 feet lower on the top of the Checkerboard lime. Three other wells in the same section are drilling below 6200 feet.

Section 2, the scene of the most active town-lot development, has been handicapped by flooded conditions and the south end of the pool has been virtually closed down since Friday noon, May 16, when the Phillips-Prairie-Slick, Sigmon 1, NW NW SW, Section 32-11n-2w came in wild. In spite of these handicaps, 13 wells were completed during the week and more than 30 locations announced. Engineers who are closely observing the field, say that the pressure decline is becoming very noticeable. Recent 48-hour production tests indicate an appreciable decline in daily potentials.

Two wildcat tests in the area have had shows of oil and gas. Ryan Consolidated, Lawton 1, NE NW, Section 3-11n-2w, had a show in the Misener sand which was topped at 6547 feet and has set 6⅝-inch casing at 6537 feet. This well, although running higher than the Slick, Banta 1, SE SW SE, Section 18-11n-2w, and the Indian Territory Illuminating Oil Company's Sarah Hiddleston 2, NW NW NE, Section 19-11n-2w, is structurally lower than some of the wells in the immediate vicinity.

Magnolia Petroleum Company and Ramsey Petroleum Corporation's Johnson 1, NE SW, Section 35-13n-3w, reported a show of gas in a core taken from 6287 to 6289 feet and is drilling ahead.

Oklahoma City Well Out Of Control

Tulsa.—Efforts to control Sigman 1, owned by Prairie Oil & Gas Company, Phillips Petroleum Company and T. B. Slick, NWc SW, 32-11-2w, in the Oklahoma City pool, had not been successful up to Tuesday afternoon, May 20. This well is a half mile east of the Mary Sudick, which was out of control 11 days before being capped by the Indian Territory Illuminating Oil Company.

Sigmon 1 was drilled by the Prairie Oil & Gas Company, which owns a fourth interest in the lease. It was being completed in the accepted manner for the pool May 16 but damaged the master gates and then the casing between the two gates. Since then it has been out of control.

The well is estimated at from 15,000 to 20,000 barrels daily. Most of the oil is being collected in pits and depressions, where it will be picked up by pumps and put in storage.

The fire hazard has brought a cessation of activity in the southeast part of the field and the area is under close guard.

The well came in May 16, after being completed by approved methods at Oklahoma City. Six-inch casing was set at 6322 feet, the top of the detridal The Simpson formation was encountered at 6345 feet and the hole drilled to 6610 feet. After bailing, the Christmas tree with two master gages was put in place.

Soon after the well began blowing, workmen began closing the master gates but both were soon damaged. Later the six-inch casing burst between the two master gates.

Tulsa.—Southwest of the Ochs pool in Russell County, Kansas, Allison and Fitzwilliams have oil standing 1700 feet in the hole in a wildcat test in NEc NW of Section 8-15-14w. This well is four miles southwest of the Ochs pool. The oil is coming from a conglomerate formation entered at 3267 feet, total depth 3272 feet.

Konawa Active

Tulsa.—The Konawa field of southern Seminole County is becoming one of the Mid-Continent's most active areas. Fifty-four wells are now producing, and the gauge for the 24-hour period ending at 7:00 a. m., Saturday morning, May 17 was 19,345 barrels, with several of the older wells shut in for proration.

Twin State Oil Company's Charlie 2-A, SW NE NE, Section 20-6n-6e, completed several weeks ago in the gusher area, produced 410 barrels the first hour under open flow and gauged 1275 barrels in nine hours, flowing against a 200-pound back pressure. Shell Petroleum Company's Caesar 1, NW SE SE, Section 20-6n-6e, a little over a half-mile to the south made 508 barrels in two hours and was shut in due to insufficient tankage. Several completions have been made during the week, and the extent of the productive territory is still a matter of conjecture. Nine failures have been completed in the field but apparently missed production due to variable sand conditions rather than adverse structural conditions.

Schurr Pool Production Base on Pipe Line Runs

Tulsa.—Output of the Schurr pool in Rice County, Kansas, will be controlled by pipe line runs for the next 60 days. Producers of the area met in Wichita, May 16, and decided on this change in production, as well as certain drilling obligations.

It was voted to drill one well to each 80 acres. After completion wells may be swabbed for 15 days, after which they will be pumped through 2½-inch tubing.

At present the field has but one pipe line out, Independent Oil & Gas Company, which has loading rack facilities nearby. Although Prairie Pipe Line Company has made preliminary surveys for a line, officials of that company informed the producers that there is no intention of building immediately.

Pierce Petroleum Bought By Sinclair Consolidated

New York City—Sinclair Consolidated Oil Corporation recently announced the purchase of Pierce Petroleum Corporation, St. Louis, a $25,000,000 company and one of the oldest oil companies in the United States. The purchase, according to E. D. Levy, president of the latter company, is subject to the approval by company stockholders at the meeting which is to be held June 12.

According to the purchase agreement, stockholders of Pierce Petroleum Corporation will receive a little more than one share of Sinclair Consolidated Oil Corporation common stock for each four shares of Pierce stock, and the former will redeem $1,150,000 of six per cent preferred stock of the latter company, now outstanding.

All assets and business of Pierce Petroleum Corporation will be taken over by the purchasing company, including: 707 bulk distributing stations; 969 service stations in the United States; 183 agencies in Mexico; 1100 railway cars; a refinery at Sand Springs, Oklahoma, of 8000 barrels capacity; a skimming plant of 4000 barrels capacity at Tampico, Mexico; and 400 miles of pipe lines, besides interest in prospective oil lands.

Phillips Petroleum Forms Natural Gas Subsidiary

Bartlesville, Oklahoma. — Formation of Phillips Natural Gas Company, a subsidiary of Phillips Petroleum Company, has been announced by Frank Phillips, president. This subsidiary will be used for further broadening the natural gas sales of the company, as well as to carry on other activities within the natural gas field.

Louisiana--Arkansas Field Notes

High Water Halts Operations in Shreveport Area

SHREVEPORT.—High Water and windstorms made a heavy inroad on the oil industry in the North Louisiana and South Arkansas oil territory during the last week. High water in Smackover Creek which rendered over 1000 families of oil workers homeless, caused approximately half of the 1439 producing wells in that area to shut down. A check Monday showed that 684 wells were known to have been shut down because of the high water and the total was expected to mount considerably. An accurate check was not immediately possible, due to the high water which disrupted field telephone lines and made it necessary for scouts and field workers to travel by boats.

Both the heavy and light districts were affected. There are 484 wells producing in the light district and 955 are producing heavy oil. How the shut down wells were divided between heavy and light was not shown in the preliminary tabulations.

A few wells in the Pine Island field of Caddo Parish, Louisiana, were also shut down because of the high water. Only six were known to have been shut down May 19. Oil field roads in Cartersville, Sarepta, Zwolle and other fields of the area became morasses of mud due to the excessive rains.

Only a few days before the high water menace a windstorm had leveled 41 derricks in the Vivian-Hosston field of Caddo Parish. Twenty-seven of the leveled derricks were owned by Bayou State Oil Corporation. Six derricks were blown down in the Homer, Louisiana, field and one in Pine Island.

Aside from the havoc by the elements, the chief center of interest during the week was in the new Holly district of De Soto Parish, Louisiana, where R. O. Roy, discoverer of the area, sold his holdings consisting of 5600 acres to Standard Oil Company of Louisiana for an announced consideration of "$100,000 and other valuable considerations." It is generally reported in oil circles that Roy received $500,000 in cash and that two other stockholders of Roy's company, Acme Land & Investment Company, received substantial sums, making the total consideration approximately $1,000,000.

Included in the transfer is Roy's oil producer, Farmer E-1, Section 5-13-13, completed several weeks ago at total depth of 2882 feet in the Woodbine, flowing at the rate of 2502 barrels daily through 1⅛-inch choke. The well is now making 782 barrels, still through the choke, according to latest gauges. The discovery gas well of the field, Fuller 1, completed in August 1928, is also included in the transfer.

Roy had started an intensive drilling campaign in the district in the last month and has three tests, included in the sale, with 6⅝-inch casing set ready for drilling in. These tests are: Lee 1, Section 5-13-13, in which 6⅝-inch casing was set at a depth of 2732 feet; Parker Brothers 1, in the same section, where casing was set at 2720 feet and a drill stem test was made from that depth to 2850 feet, which showed 5,000,000 cubic feet; and Whittaker A-1, also in Section 5-13-13, where casing was set at 2729 feet.

Will Erect Two Tanks

Just prior to the sale Roy announced locations for three other tests in that district. Farmer D-1, SW SE Section 32-14-13, is a derrick pattern; H. B. Sample 1, SW NE Section 7-13-13, is a derrick; and Jesse Fuller 2, NW SE Section 6-13-13, is rigging up. Four other tests of Roy's are drilling in the field and locations have previously been made for five others. Since acquiring the property Standard Oil Company of Louisiana has announced plans for erecting two additional 55,000-barrel tanks at the Farmer E-1 well.

With Zwolle's hopes of getting Woodbine horizon production temporarily given a set-back by the testing dry of W. G. Gary's Nulton 1, Section 6-7-12, at total depth of 3665 feet, this operator is coring ahead in the Woodbine. The test was made after 4½-inch casing was set at 3557 feet after eight feet of chalk identified tentatively as Austin chalk had been cored showing oil of a light gravity.

Hopes of connecting up production between the older Zwolle area, Blue Lake, and the western limits of the Zwolle east field in the town of Zwolle, were also given a temporary reverse after the Ohio Oil Company's Bowman-Hicks 1, Account 2, Section 6-7-13, tested dry at 2470 feet after drilling plug. Six-inch casing had been set at 2070 feet, the test having topped the marl at 2062 feet. The hole was deepened to 2530 feet, where it encountered salt water in the Blossom, known in Zwolle for its salt water.

Four official completions were recorded in Zwolle, including R. L. Gay, Trustee's, Bowman-Hicks 7, Section 14-7-14, which extended the older field's producing area half a mile west. Loring Oil Company extended production slightly south in the east field when its Bowman-Hicks 7, Section 4-7-12, was put on the beam at total depth of 2700 feet, pumping 10 barrels daily. This company has not yet had a failure in Zwolle. In the townsite, F. M. Hood standardized Winston 1, Section 31-8-12, as a 40-barrel pumper at total depth of 2515 feet, and Jones & Johnson are pumping Pearson 1, in the same section, at the rate of 35 barrels daily from total depth of 2318 feet.

Rigging for Winston 2

Hood is rigging up for Winston 2, SE NW Section 31-8-12, across the road from his producer. H. E. Granville has derrick up for Parrott 1, SE NW Section 31-8-12, and Posey and associates have derrick up for Peterson 1, in the same section. These were the only new locations for the week in Zwolle. Only one new location was announced for the Cartersville field of Bossier Parish, this being Magnolia Petroleum Company's Roberson 2, SW NE Section 26-23-12. This location followed on the heels of this company's Roberson 1, in the same section, blowing oil at the rate of 120 barrels daily after being shot at 2950 feet, the new and upper Woodbine oil producing horizon of Cartersville, where one well is already producing from this stratus, which is 100 feet above the original oil producing zone. Roberson 1 had been drilled to total depth of 3331 feet, where it tested dry. It was then plugged back to 2950 feet, where it was shot. Five and three-fourths-inch casing had been set at 3137 feet.

Arkansas Fuel Oil Company, one of the most active wildcatters in this area, has made locations for a test in Lincoln Parish. The new test is Lewis & Company 1, NW SE Section 26-20-4w.

During the week this company abandoned a deep test in the Urania field of La Salle Parish. This test, Urania F-5, NE SE Section 24-10-1e, was abandoned as a dry hole at 6463 feet. The last accurate information as to formation in the test was that it was drilling hard shale at 6171 feet. The test had shown 500,000 cubic feet of dry gas in a drill stem test at 4740 feet, probably in the upper Trinity. Eight and one-eighth-inch casing was set at 4620 feet, 13¾-inch casing at 1560 feet, and 20-inch surface casing at 20 feet. The oil producing horizon in Urania is 1500 feet.

Another wildcat abandoned as a dry hole during the week was Palmer Corporation's Marston A-1, Section 11-19-10e, West Carroll Parish, which was abandoned as a dry hole at 2800 feet. This company has three gas wells in this semi-wildcat area which extends over into East Carroll Parish in the extreme northeast part of Louisiana.

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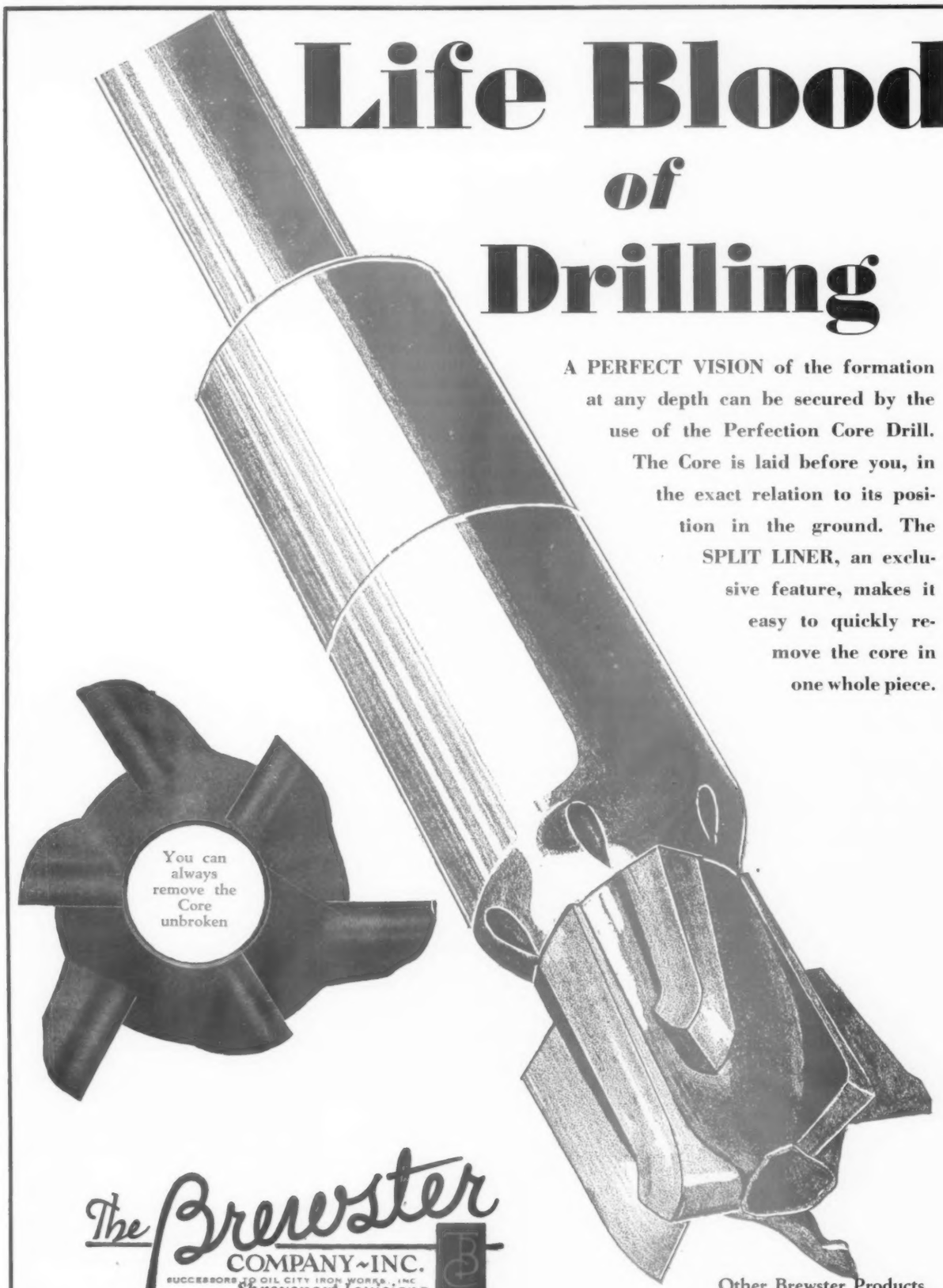

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Plans for Three Natural Gas Lines To Midwest Go Forward

AMARILLO, Texas.—Mobilizing of equipment and workmen to carry out previously announced plans of three separate organizations in building natural gas lines from the Texas Panhandle district to the heart of the middlewest is now taking place with work well underway on the Missouri Valley Gas Company's project. Central States Natural Gas Company has elected to delay the completion of its direct 24-inch carrier to Chicago until 1931, but will commence actual construction work within a few months, while Missouri-Kansas Pipe Line Company has placed contracts for two major units on its long trunk line system that may involve more trunk line mileage than the other two projects.

Prompt action is being taken by Missouri-Kansas Pipe Line Company to carry out its previously announced plans of building a trunk line from the Texas Panhandle to a group of cities and towns in the middlewest, including a hookup with systems now in operation in Kansas, Missouri, Illinois, Indiana and Kentucky. Contract was awarded on May 9 to Oklahoma Contracting Company, Dallas, for all construction work on the first unit of the proposed interstate trunk line system, consisting of 162 miles of combination 22 and 24-inch pipe from Moore County, Texas Panhandle, to Dodge City, Kansas. This contracting firm has established a field camp near Stinnett, Texas, and will be ready to start work on the south end of the unit with a complete organization by the time the first pipe shipments arrive from mills of National Tube Company.

Approximately 102 miles of 22-inch welded and coupled pipe will be used in building north from the Panhandle to the Kansas-Oklahoma line, while the remaining 60 miles to Dodge City will use 24-inch welded and coupled pipe. Oklahoma Contracting Company has assigned Mike DeLuca as construction superintendent on this unit, working under the direction of E. R. Johns and C. A. Mulligan, who are general superintendents, with headquarters at Dallas.

Missouri-Kansas Pipe Line Company proposes to extend north from Dodge City to points in Nebraska, Iowa and possibly further north, while the company is expected to award contract before the close of May for a unit between Dodge City and Paola, Kansas. Contract has been awarded to Conner Construction Company, Kansas City, to start work immeditaely in building an 104-mile trunk line unit from Paola to Boonville, Missouri, using 22-inch welded and coupled pipe. It is reported that the company will soon announce details as to the construction of an extension from Boonville across Illinois to Indiana to make a hookup with extensive gas lines operating in the southern part of the latter state, and possibly a line to Indianapolis and other cities in the area.

Data Supplied Contractors

Pipe line contractors have been supplied with data on Central States Natural Gas Company's proposed 24-inch natural gas line to extend from the heart of the Texas Panhandle gas area to Chicago and intermediate points to make bids on certain sections. All bids must be filed with E. V. Kessinger, who has charge of construction work with headquarters on the sixth floor of the Professional building, Kansas City, by June 10. It is expected that awards will be made by July 1, and actual construction work be launched later in the summer.

In connection with this project two new affiliated companies have been created, including Continental Construction Corporation, which was recently given a Delaware charter. Cities Service Gas Company, Standard Oil Company of New Jersey and the Martin J. Insull interests, Chicago, are behind this company. Central States Company is the other new organization, and its principal stockholders are Phillips Petroleum Company, The Texas Corporation, Skelly Oil Company and Columbian Carbon Company.

It is reported that because of the late start being gained on this major gas line project the construction work will be taken in easy stages so as to complete same the following summer, thereby having more time to switch the domestic and industrial consumers in the various cities to be served from manufactured to natural gas. The entire system will be in service before the close of the summer of 1931.

Additional construction crews have been put to work on Missouri Valley Gas Company's proposed 1000-mile trunk line project from the Texas Panhandle to points in Nebraska, Iowa, and other nearby states. This company is controlled by North American Light & Power Company, United Light & Power Company, Lone Star Gas Corporation, and others. Construction work has been underway since late in April on a 300-mile 24-inch unit from Clifton, Kansas, to Lincoln, Omaha, Sioux City and other nearby points. Smith Bros., Inc., Dallas, have the contract for building this unit.

Construction work began last week in laying the lower unit of Missouri Valley Gas Company's system from a point near Ashland, Kansas, toward the Texas Panhandle, where terminal will be established near Skellytown, Carson County. Twenty-four-inch pipe, connected with Dresser couplings, will be used on this unit and construction is being done by workmen of North American Light & Power Company, with H. R. Maxon directing the work from temporary offices at Ashland. All booster stations and river crossings on this section will be built by Lone Star Gas Corporation, with Elmer Schmidt in charge of construction.

Production Up-trend Endangers Market Structure
(Continued from page 42)

Efforts of Mid-Continent refiners to halt the downward trend of gasoline prices gave promise of results during the past week when quotations remained on a par with those of the previous week, with a price range of six and one-half to seven cents per gallon for prompt shipments of U. S. motor grade. These interior plant owners have suffered from an inactive market on nearly all refined products for several weeks, with trading particularly dull for kerosene and fuel oils. Unfavorable weather for this season of the year is charged with setback given the gasoline market late in April and continuing through elapsed portion of May, and resumption of trading by domestic jobbers rests on the return of favorable motoring condition.

Curtailment of crude takings by purchasers in a number of interior fields of Texas has become known lately. During the past week a slight reduction in production from the Howard-Glasscock County prorated area became necessary to conform with maximum requirements of pipe line companies, while the temporary order placed into effect last March to limit the output of the Yates field to 110,000 barrels daily, or 20,000 barrels less than the normal allowance, is to be continued until the close of June. Numerous completions made lately from the shallow sand horizon in the Olney townsite field. North Texas district, has resulted in a surplus of production, with local purchasers fixing a limit on their takings. Similar conditions prevail in the Finley-Brown field, Gray County, where pipe line companies are dodging new connections, with some exceptions.

Gas Line Under Way

San Francisco.—The construction of another large gas line between the San Francisco Bay district and Kettleman Hills assures a full supply of straight natural gas for an indefinite period and practically removes the necessity of mixing artificial gas with the natural product. This new line is being built jointly by Standard Oil Company and Pacific Gas and Electric Company and follows the inland or valley route to Oakland.

Gas for Antelope Valley

Bakersfield, California.—Natural gas will be served to various towns in the Antelope Valley by Commercial Gas Company, which recently applied to the State Railroad Commission for a certificate of public necessity. Liquid gas will be brought to the valley in tank wagons and distributed through pipe lines to the different communities. Lancaster will be the center of activities.

News From California Fields

BRAD MILLS, *Staff Representative, Los Angeles, California*

Price Cut Follows Failure of Unanimity in Proration

LOS ANGELES.—Climaxing a week of wrangling, during which every effort was made to bring production down to the desired level in the critical fields, Standard Oil Company of California drastically reduced the price of Santa Fe Springs crude, effective May 17, the new prices being little more than half the former scale. The reduction applies only to this field, other areas having substantially met their current allowables after a last-minute effort to avoid similar cuts.

After dilly-dallying along for weeks, recalcitrant operators were challenged to show their hands, with the threat that if immediate favorable results were not in evidence drastic crude reductions might be expected. Hooper C. Dunbar, chairman of the Santa Fe Springs operators' committee, sent an ultimatum to operators, explaining that the signatures of all who had been producing more than their allowable must be available by 10 a.m., May 16, and that if the correct allotments were not reached these obstinate operators would be charged with failure of the curtailment program and any price cuts which might result from a continuation of over-production.

At a meeting of the Operators' General Committee of Fifteen held May 16, it was evident that certain important operators at Santa Fe Springs would not sign the curtailment agreement. The chairman of the field committee reported that the field as a whole favored the new plan, but because of the positive refusal of Oscar Howard and the changing attitude of Paul Getty of George F. Getty, Inc., there was little possibility of favorable action on the part of those holding out. A motion to extend the time for bringing in the holdouts was unanimously voted down. Executives of major oil companies and one of the chief holdouts engaged in a wordy battle, but there was no apparent change in the attitude of the latter.

Reason for Cut

George F. Getty, Inc., and the Wilshire group have been the largest holdouts at Santa Fe Springs and are being blamed by other operators for the price reduction. Production has been running about 15,000 barrels above the allowable for several weeks and the bulk of this excess has been charged to failure of the companies to co-operate in the movement.

In reducing the price of crude at Santa Fe Springs, Standard Oil Company of California stated that conditions do not justify offering of prices that will encourage over-production, and that operators have failed to agree on conservation which has been accepted by operators in all fields in California. It was further set forth that this failure to agree places in jeopardy the entire conservation movement in California. Emphasis was placed on the fact that no change was made in prices offered by Standard Oil Company in other California fields and that the company was maintaining its established policy of currently offering producers such prices for crude as conditions warrant.

The last-minute effort to bring production down did not fall far short of the objective of 104,716 barrels, actual output having been 115,193 barrels on the day before the price cut. The combined excesses of the holdouts would have brought the total to the correct level and prevented the slash in crude prices. A few of the companies were actually below their allowables, but they will suffer from lower

Santa Fe Springs As Production Threat Definitely Through

LOS ANGELES.—Additional proof that the Santa Fe Springs field is "about done" was observed during the week, and it is extremely doubtful whether new production can more than offset the natural decline over a 30-day period. This does not mean that the field cannot produce above its present level nor that the decline will stage a sensational plunge, but indications point to a gradually lower potential during the summer months and the definite removal of the field from the dangerous list. A producing sand below the Clarke zone might cause a retraction of the foregoing statements and place the field in a more critical class, but the great depth of such a formation would make its development slow and difficult.

Of the seven wells completed in the Clarke zone during the week, none was large enough to attract even passing interest. Average initial production of this group was about 275 barrels, as compared with an average of around 3000 barrels during the early stages of development.

Increase in cuts of the completions since March 1 has been steady and it is not unusual for the average cut to run close to 20 per cent. It is unusual to complete a well with the minimum one-tenth of one per cent cut, while a water production of 50 per cent has not been uncommon in some parts of the field.

Of the 56 active wells, not more than 30 will be completed in the Clarke zone, with 25 as a more probable figure. Total initial production from these completions should not exceed 14,000 barrels. This zone is now producing 60,000 barrels and has a potential of about 75,000 barrels. Potential of this sand should drop to 50,000 barrels by August 1.

The O'Connell zone is showing more resistance to a decline than the Clarke sand and will stand out as the best of the several deep zones. Although the gas pressure has declined sharply and the wells are ceasing to flow, producers respond readily to the compressor.

Several wells were shut in during the week to comply with curtailment orders, but the field decline was also partially due to the natural drop of the deep zone producers. One company shut in about 3000 barrels, but this was offset by opening up of half as much by smaller producers.

No important developments have been noted in the very deep test in the Hathaway zone. The Texas Company's Patterson 10 is now tied up with a fishing job at 9068 feet and other deep tests are not making progress. There is still a chance for production in the Hathaway zone and subsequent tests may prove important, but the zone probably would be small at the very best.

prices along with those responsible for the slash.

Earlier in the week a meeting of Santa Fe Springs operators was held and a resolution adopted to reduce production to 57 per cent of the potential. A telegram was sent all operators, advising them of the action and urging them to sign the agreement to make further reduction.

The price cut at Santa Fe Springs may result in a complete breakdown of curtailment in this field, but there is a belief in some quarters that the co-operation will be forthcoming and the price restored within two weeks. Even if the lid is thrown off and the field produced at a maximum rate, the limit probably will be 175,000 barrels. A decline would immediately set in and the total probably would drop to 100,000 barrels within 90 days.

The inconsistency of a low price for crude in one field and a much higher price in adjoining fields can not long endure. Either Santa Fe Springs will get in line or other fields will slop over and "get the ax," according to economists who have been dizzy in their efforts to trace the market action.

Even in the face of a price cut, California is in a much stronger position than at the same time last year. Production at Santa Fe Springs is headed definitely downward and the state potential is bound to go the same way, barring unexpected developments in the new fields.

Long Beach (Signal Hill) operators have swung in line at the last moment and have agreed to meet the new production schedule, thus escaping a price cut. A. T. Jergins, chairman of the operators' field committee, reported to the general committee that all operators except three were in full accord with the curtailment program and had signed the agreement. Production of the three refusing to sign the agreement is less than one per cent of the field potential.

A new six-month curtailment program, calling for an allowable of 596,000 barrels instead of the former allowable of 610,000 barrels, has been adopted by the General Committee of Fifteen, and the plan is expected to eliminate over-production within the period it is effective. To reach this mark, the allowables in the various fields have been changed only slightly. Santa Fe Springs is given about 105,000 barrels, with a slight reduction above the former allowable at Long Beach. Such fields as Seal Beach, Kern Front, Maricopa Flats are given smaller allowables, while Ventura and Elwood are given greater allowables.

There has been no definite action in the injunction proceedings affecting Santa Fe Springs. Although a preliminary injunction was issued against all operators, it is practically inoperative, pending a decision of the higher court.

Fear that the breakdown of curtailment at Santa Fe Springs will spread to all other fields and cause a long period of over-production is being expressed, but there is about an even chance that the difficulties will be overcome and present advantages gained by curtailment held for the future.

Intensive Development May Be Expected at Venice-Del Rey

LOS ANGELES.—No concerted effort is being made to prevent intensive development of the new Venice-Del Rey field and there is little doubt but that the next substantial increase in the Los Angeles basin output will be from this area. Two wells have been completed by Ohio Oil Company, and although the total initial production was only 4000 barrels the fact that both producers are flowing clean oil is an important development in any new field. The discovery well came in unexpectedly when the crew was trying to locate the source of supposed water trouble and flowed steadily at the rate of 2400 barrels. The second well, recently completed with an initial flow of 1685 barrels, was slightly smaller but the oil is 25 gravity and free from water. With a gas production of only 1,200,000 cubic feet, the second well is producing with an almost ideal gas-oil ratio. Gasoline content of the gas is nearly four gallons per thousand cubic feet. The Ohio Oil Company is building an absorption plant to treat gas from its wells.

With 30 tests under way and the restricted townlot area anxious to join in the activity, the new field will be rapidly developed and should either be an important factor or a disappointment in rapid order. Active drilling wells total 12, in addition to eight locations, four rigs and four wells about to get under way. One large completion would result in many new locations overnight.

Failure of Union Oil Company's Del Rey 1 on a production test at 3610 feet temporarily eliminated the possibility of commercial production in the shallow zone, but a faulty water shutoff rather than water in the sand may have been responsible for the poor showing. This well is located more than half a mile southeast of the discovery well and the fact that it found the shallow oil sand about 400 feet above the point it was cored in the original producer is practically proof that the structure rises up to the southeast and extends toward Del Rey and the ocean. Union Oil Company's No. 1 was tested between 3480 and 3610 feet and cores revealed a formation which should have made a commerical well, although the sand was streaked in places. Discovery of the shallow zone at such a depth in this well indicates that much of the structure lies under the ocean. The law prohibits tideland drilling at this point.

Failure of Ohio Oil Company to find oil sand in Howland 1, located east of the discovery well, virtually eliminates much of the flat area between present production and Del Rey boulevard and adds weight to the theory that the trend of production will be toward the ocean. The discovery well is probably located on the northwest flank, as indicated by cores near the bottom of the hole, although only additional drilling will disclose the real facts. Howland is coring at 6835 feet.

Star Petroleum Company's Venice 1 is coring ahead at 6150 feet and failure to encounter the oil sand is a distinct surprise. Possibility that the hole is crooked offers a fairly satisfactory explanation, since the oil sand was expected around 6000 feet. The formation is brown shale with traces of gas and the oil sand probably will be found within the next 50 feet.

Activity in the unrestricted district southeast of Venice has transformed the area into a busy oil field from a quiet, swampy flat during the past few months. The oil is much heavier than the average produced in other Los Angeles basin fields and carries a high sulphur content, but if a large flush production can be obtained the objectionable features of the development will be waived aside and intensive drilling continued.

Kern County Inactive

Bakersfield, Calif. — The absence of promising wildcat tests in Kern County during the past six months has been conspicuous and probably not during the last five years has a similar period been so free from constant excitement in different districts. Leasing has also been on the decline in and near the districts producing heavy oil, but a revival of both drilling and leasing is expected as soon as over-production of light oil is brought to an end.

Rincon Tideland Test

Ventura, Calif. — General Petroleum Corporation has completed Ferguson 1, a tideland test located 1800 feet out in the ocean and an offset to mainland producers in the Rincon field, at 3580 feet with an initial production of 700 barrels. The well was plugged back to 3447 feet for the production test, however. Such a completion is not expected to cause a rush to drill other tideland permits, although this ocean test shows the structure to lie chiefly under the ocean.

Open-Flow At Elwood May Prove Costly

Santa Barbara, Calif.—The action of operators at Elwood in flowing their wells wide open through the casing to obtain the largest possible potential, made the field look very imposing, but such practice is not considered beneficial to the ultimate recovery record. One well which recently died has failed to respond to swabbing, but there is no proof that open flow tests in offsets caused the poor showing. Flowing of the wells through the casing probably will result in the forced use of compressors before the wells would stop flowing under ordinary conditions. Such a practice probably will

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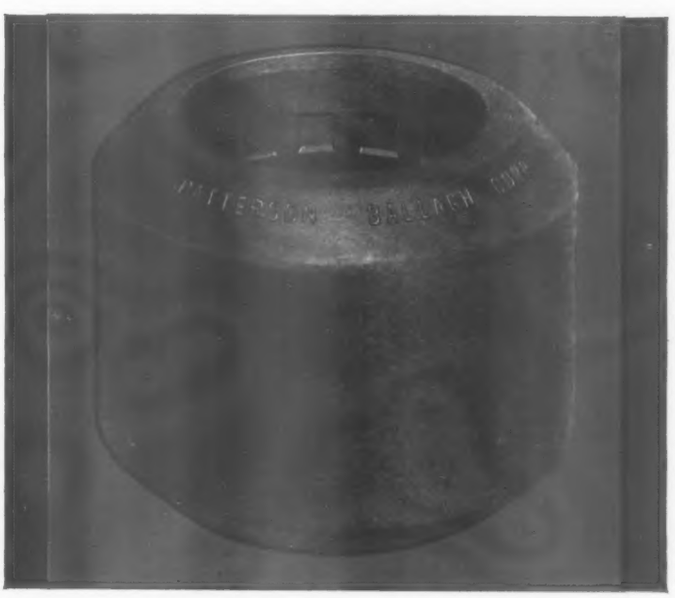

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not cause a sharp drop in production but the additional expense will be a factor. With a low gas-oil ratio, the wells may stop flowing while it is still possible to recover a large production through artificial means.

Test in Temblor North Dome at 7550 Feet

Coalinga, Calif. — General Petroleum Corporation is drilling in the Temblor sand at 7550 feet in Oschner 2, and may be able to determine the thickness of the producing formation with this well. Already about 320 feet more sand has been cut than in any other well, and although the determination of the thickness at this point might not apply to all of the north dome, variations probably would be negligible and use of this information would be valuable in completing wells. Completion of one well near the top of the Temblor sand resulted in a small production. Subsequent deepening increased the flow from 900 barrels to about 4000 barrels. Knowledge of the sand's thickness would be important to wells being drilled near the edge of the structure and in questionable areas.

Superior Oil Company has found the Bentonite layer at 7015 feet in Huffman 1, and should reach the oil sand within another 50 feet. Logging of this important marker gives the company a clue and places the well in a more promising class.

Associated Oil Company is coring ahead at 6875 feet in Whepley 1, an offset to Standard Oil Company's No. 35-J and Petroleum Securities Company's Felix 1, following a successful water shutoff with the nine-inch at 6860 feet. This well should make a good producer and will be allowed to flow as a protection to the lease.

Drilling wells have dwindled to five, with several operators marking time, pending the outcome of announcement of the development program being considered by a special committee.

Gasoline Manufacturers Weather Crisis Through Efficiency

TULSA.—"While suffering proportionately with the producing division the adverse economic conditions of the past year, the natural gasoline department has taken the bit in its teeth and has met the situation with increased plant efficiency, lowered overhead and production costs, made better products, promoted a wider utilization of by-products and created new diversified markets," so E. R. Lederer told natural gasoline manufacturers here this week.

Mr. Lederer, with Texas Pacific Coal & Oil Company, is president of the Natural Gasoline Association of America which held its ninth annual meeting here Tuesday, Wednesday and Thursday, May 20, 21, 22.

In discussing the economic condition of the industry, Mr. Lederer characterized the past year as one of curtailment and proration of production, partly voluntary and partly forced by governmental authorities. He further said that some of the larger natural gasoline plants with large investments in such prorated or curtailed areas had suffered but that it was his belief that the entire industry welcomes and approves such restrictive steps as long as they are systematic, reasonable and fair. According to Mr. Lederer, the natural gasoline business has maintained a fortunate equilibrium. Having produced 2,195,400,000 gallons in 1929 as compared with 1,777,700,000 gallons, or 28 per cent more than 1928. California, especially Santa Fe Springs, and Greater Seminole, furnished this increase.

Source of 1930 Increase

In 1930, he said, that the industry may expect Oklahoma City, West Texas and New Mexico to furnish the increase. Practically all of the 417,000,000 gallons increase in production last year was absorbed by refineries, it was pointed out, and stocks remained almost even. In 1929 the gasoline demand increased 13 per cent over the previous year while gasoline production, of which natural gasoline represents about 12 per cent, increased 17 per cent.

According to the Bureau of Mines figures for the first quarter of 1930, the daily production of natural gasoline averaged 6,180,000 gallons, which figures would indicate that stocks have increased slightly, but not alarmingly, according to Mr. Lederer. Unless an unexpected flood of natural gasoline breaks in on the industry, which cannot be taken care of by increased refinery or export demand during the summer season, stocks should remain on a sound level this year.

The committee on gas purchase contracts has completed its work and has ready for the board of directors their suggested form of contract. Other business before the association dealt largely with technical problems of manufacture and distriubtion of natural gasoline and by-products.

Bear's Den Test

Great Falls, Montana.—Further proof of the Bear's Den structure, which was discovered last year in a well drilled by the Sunburst Oil & Refining Company, is indicated by that company's present test which is reported to be checking 175 feet higher on the structure and to have found 5,000,000 cubic feet of gas in the Colorado where the discovery well had only a small showing. The objective of the present test is the Madison limestone where a considerable oil production is expected. The structure is one of the many small ones to be found in the Sweetgrass Hills area, in the northern part of the state.

California Wildcatting Activity Off Slightly

Santa Barbara, Calif.—Wildcatting in Santa Barbara County has shown a slight decline from the record total of a few months ago, but several active tests are still considered with favor as the result of showings encountered at various levels. Standard Oil Company failed to obtain a water shut-off in Gerber 1, a test in the Point Concepcion district, following the running of a 6⅝-inch liner to bottom at 4600 feet. This well offered much promise and failure of the production test was a disappointment.

Bolsa Chica Oil Corporation is building a pier to its ocean location off Campbell's Point, about three miles from the Elwood field, and will drill on the theory that the structure will help to fill in a line of fields lying in the ocean and accessible only from this point. Submarine geology was employed and the structure was well defined before the location was made. Discovery of the Elwood field, followed closely by the Santa Barbara Mesa field, increased wildcatting from a few scattered tests to about 25 projects within a few months. The natural failure to find additional fields is beginning to be reflected in an increased number of active wildcats.

Los Cerritos Field Active

Long Beach, Calif. A shifting of Long Beach activity from the southeast extension to the Los Cerritos area has aided the field in maintaining its steady drilling program and has revived interest in a sector which was neglected during the early part of the deepening campaign. Recent re-completions were important enough to indicate a better production at deeper levels and the long-delayed working over of many old producers will result. Occasional completion of 1000-barrel producers in all parts of the field keeps the district active and stamps it as California's greatest oil producing district.

Deepen Barnsdall Test

Huntington Beach, Calif. — Barnsdall Oil Company is installing heavier equipment at Syndicate 1, an important deep test in the Huntington Beach field, and will deepen the well from 5596 feet following cementing of a string of 8¼-inch casing at 5530 feet. The formation being tested carries oil and commercial production below 5500 feet is possible. Success of this well would result in an extensive deep drilling campaign.

Tests Polecat Structure

Cody, Wyoming.—One of the state's most interesting wildcat wells is that on Polecat structure in northern Wyoming being drilled by Cody Petroleum Company. The well had an open flow of 7,500,000 feet of gas in the second Frontier from 2657 feet to 2783 feet and is now drilling and underreaming at 3340 feet, supposedly in the Muddy sand. The test may be carried to the Tensleep formation, which should be found around 5500 feet.

1930

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SALES AND ENGINEERING SERVICE IN PRINCIPAL CITIES

Darst Creek Field is Monument to Accuracy of Geologic Findings

(*Continued from page 27*)

Other Formations Present

Lying immediately above the producing formation, the Edwards lime, there are other limestones, clay, shale and chalk, the top or bottom of the latter serving as a common marker in drilling. The average thicknesses of those various formations as encountered at Darst Creek are indicated in the following table:

Formation	Thickness in feet
Austin Chalk	165
Eagleford Shale (brown)	35
Buda Limestone (hard)	50
Del Rio Clay	60
Georgetown Limestone	60
Total	370

The above table is fairly accurate as applied to any well. For example, from the top of the chalk to top of the Edwards in The Texas Company's Knoblock 3-B is 373 feet; in Humble Oil & Refining Company's Denman A-7 it is 380 feet; in Sun Oil Company's Knoblock 6 it is 356 feet. The Edwards limestone itself has a thickness of several hundred feet, and it is penetrated to varying depths in drilling wells, depending upon location on structure. The maximum amount of lime taken in is around 70 feet,—in wells that are on high structure. In connection with water encroachment a hearing was held in Austin March 17, 1930, before R. D. Parker, chief supervisor of the oil and gas division; and the chief question before the meeting was the determination of the depth to which wells should be drilled into the Edwards limestone. The state department was contemplating making an admonitory ruling which would be in the interest of conservation, without damaging any individual operators. Although such a ruling had no precedent in Texas and was never applied at Darst Creek, some interesting facts were brought out in the hearing at Austin. It was pointed out that the Edwards lime is highly porous; that water beneath the oil occurring in that formation affords the hydrostatic pressure which moves the oil to the wells in the field; that in order to get maximum oil recovery from the wells it is necessary to drill into the lime several feet; and as the water is immediately below, there is the danger of drilling into the water, increasing the cost of lifting the oil, and jeopardizing properly completed wells on adjoining leases.

Drill 31 Feet in Pay

The data introduced at the meeting by representatives of major operators in the field showed that wells of Gulf Production Company had been drilled to an average depth of 31 feet into the pay; Humble Oil & Refining Company wells to an average of 32 feet into it; wells of The Texas Company to an average depth of 37 feet into the lime pay; and those of Magnolia Petroleum Company to an average depth of 39 feet into the lime. (The Magnolia wells varied from 25 to 55 feet into the pay).

Above the water line in the Edwards lime at Darst Creek there is a layer of cap rock, probably formed through action of the water. That cap was commonly found also at Salt Flat and at Luling; and in those fields it was regarded as the lowest point to which wells could be drilled without going into water, being used, therefore, as a marker for cessation of drilling. At first it was also used at Darst Creek as such a marker, but eventually it was found in wells high on the structure that the cap rock was absent, ostensibly having pinched out. Slightly farther down the structure it was commonly drilled into. Then United North & South Development Company decided to try drilling through the cap. It did so, went back into the regular Edwards lime to considerable depth, and finally completed the well as a good producer, free of water. Since then other wells have regularly been drilled through the cap rock, where found high on structure, with favorable results.

Part of Humble Oil & Refining Company camp in south end of Darst Creek field, showing office building on extreme right, and bunk houses to left. Warehouse is to the right and does not show in the picture

The faulted condition at Darst Creek which made possible the accumulation of oil consisted of a raising of the Edwards limestone several hundred feet above its normal position, putting the up-throw portion of it into fault contact with the Austin chalk or Taylor marl to form the required seal for trapping the oil.

Edwards of Lower Cretaceous

The Edwards limestone is a formation of Lower Cretaceous or Comancheoan age. Taylor marl, Austin chalk, and Eagleford shale, other formations mentioned above are Upper Cretaceous or Gulfain. Below the Edwards lime is the Glenrose lime, also of Lower Cretaceous age. No deep tests have been drilled at Darst Creek or at Salk Flat, but several were drilled by United North & South Development Company in the old Luling field within the past several years; its Gideon 1 went out of Glenrose lime into schist around 4800 feet, and was abandoned in that formation at 4850 feet. Tiller 2 and Kelly 1 were abandoned about August 1, 1928, the former at 7504 feet and the latter at 7859 feet. They had continued in solid and unbroken schist from around 4800 feet to their final depths.

In point of cost and drilling time the tests were probably unprecedented. Kelly 1 had its fourth birthday about a month before it was abandoned, having been started on July 1, 1924. Tiller 2 was drilling for over three years. During a whole year before they were abandoned Kelly 1 was drilled 759 feet, an average of around two feet per day, and Tiller 2 was drilled 930 feet.

At this juncture, for the benefit of readers not familiar with the Balcones fault system, it will be briefly described, so that the Darst Creek field may be more thoroughly understood. The Balcones Escarpment, an irregular ridge of high hills, extends from the vicinity of Del Rio, on the Rio Grande River, eastward to the environs of San Antonio, thence northeastward to the Colorado River near Austin. That escarpment was formed by faulting which lowered the coastal plain on the southeast below the level of the Edwards Plateau, to the northwest. In a comprehensive article on "The Mechanics of the Balcones Fault System," written for THE OIL WEEKLY and published in its issue of October 19, 1928, Richard A. Jones, petroleum geologist, explained the above faulting in the following words:

Much Sediment Deposited

"Throughout an immense duration of many million years of geological time, great thickness of sediments were deposited in Texas during the Lower Cretaceous, Upper Cretaceous, and Tertiary periods. All this immeasurable weight of limestone, sandstone, and

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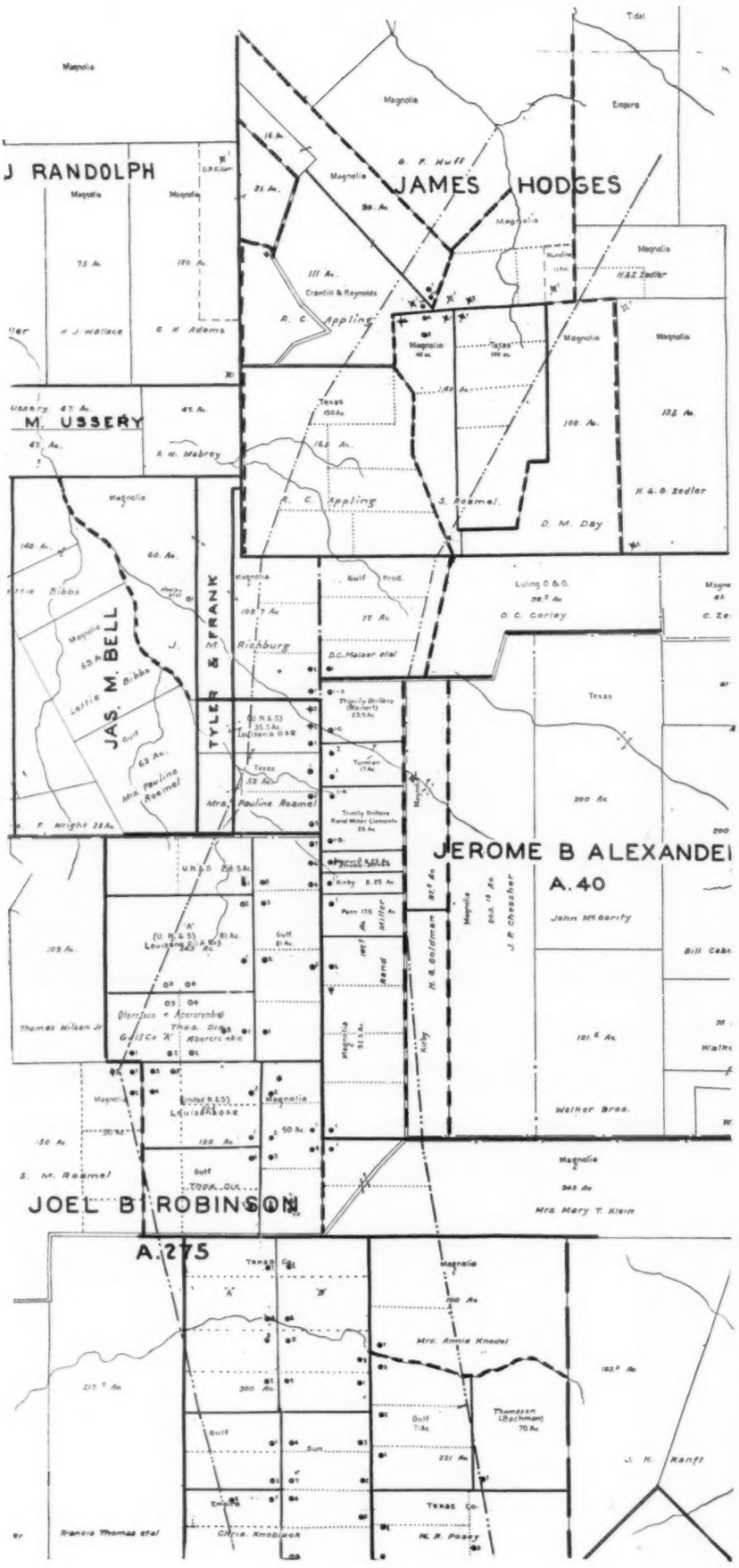


shale was laid down on a basement which slopes into the Gulf of Mexico.

"Now, in the center of the Gulf of Mexico is a great oceanic depression, many thousands of feet in depth, known as the Sigsbee Deep. It is believed that the sediments deposited in Texas to the north end and to the west of this deep were, due to their great weight, gradually slumping and creeping through the geologic eras down toward this central depression of the gulf.

"Finally there arrived a time, supposedly near the end of the Pliocene epoch, when the critical point was reached, when the strata, instead of continuing gently to slide coastward, broke and faulted, and slumped toward the gulf at an increased rate of speed."

Immediately southeast of the Balcones Escarpment, that is, toward the coast, is the main Balcones Fault, a fracture along which the rocks have been dropped down for several hundred feet, the down-throw being always on the southeast. Southeast of that main fault is a zone, many miles wide, sometimes described as the "Balcones fault system," broken into numerous minor faults which trend largely parallel with the original fracture. While the Balcones Escarpment ends near Austin, the Balcones system of faulting extends on to the northeast through Central and East Texas and possibly into Arkansas. About 25 miles southeast of the main Balcones Fault lie the oil fields.

While the down-throw of the faults in the Balcones fault zone are predominantly to the southeast, as in the case of the original fault, there are others which have the downthrow on the opposite side, the northwest, with the upthrow on the southeast. For as the successive faults occurred in the above mentioned zone, segments of rock were apparently dropped down occassionally as fallen blocks from the larger segments. Those less common faults, with the up-throw on the southeast side, are the ones which furnish the trap for petroleum accumulation. Such are the faults at Darst Creek, Salt Flat, Luling, Mexia and Corsicana-Powell.

Located in Guadalupe County

The Darst Creek field is located in the eastern portion of Guadalupe County, 12 miles east of Seguin and about the same distance southwest of Luling. There is a paved road leading from Seguin to the southern end of the field, but there are only unimproved roads to Luling, which shares with Seguin the position of a shipping point, inas-

Northeast portion of Darst Creek field, Guadalupe County, with dotted lines showing division of area into 20-acre units for proration of production. This division is laid as working basis, and is subject to revision or shifting, depending upon structural conditions as revealed in future drilling. Upper line of Magnolia Petroleum Company lease on which producer, R. C. Appling 1, is located runs practically due north

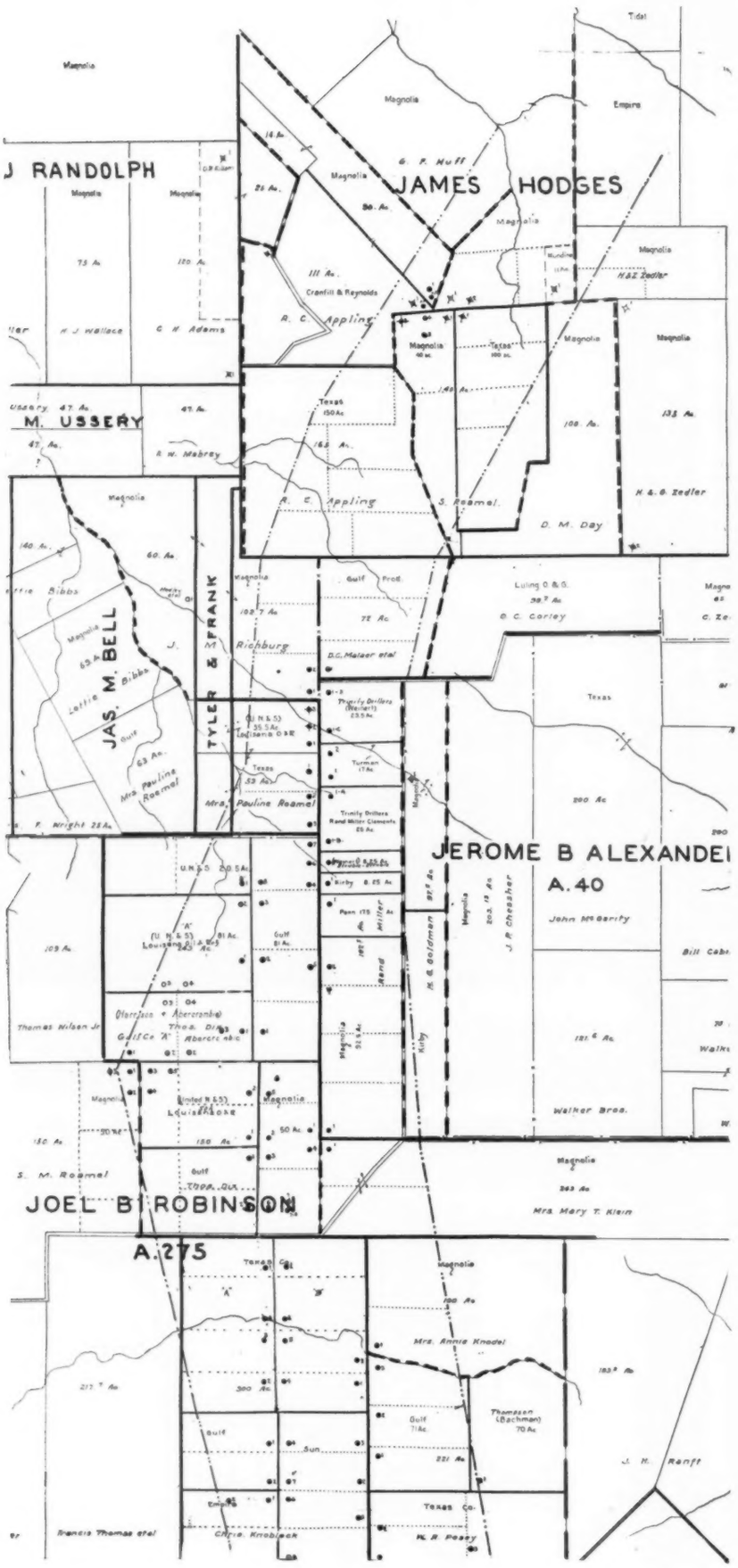
much as there are various supply company stores at Luling which were established to serve the old Luling field and later the Salt Flat field. The highway which runs near the south end of the Darst Creek field is part of the Old Spanish Trail highway leading from San Antonio to Houston. Along that highway T. T. Word Supply Company, Houston Oil Field Material Company, Ussery Machine Shop and Sour Lake Machine Shop have establishments serving the field. Halliburton Oil Well Cementing Company, with headquarters at Luling, does a large part of the cementing at Darst Creek. In the central portion of the field is a new town, by the name of Gusher, established following the oil discovery. It has several cafes, a two-story hotel, drug store, and dry goods and grocery stores. It was laid off in August, 1929, but built largely after the beginning of 1930. It did not have a postoffice early in April, although one had been applied for. Seguin is the usual mailing address. The principal companies operating in the field have established warehouses in the field and residences for their employees.

Although there are minor differences, Darst Creek is largely a duplicate of Salt Flat, which is located directly in line with it about 10 miles to the northeast, in Caldwell County just outside of Luling. Salt Flat was discovered in the Autumn of 1928, and reached a peak production of 49,858 barrels daily from 245 flowing and pumping wells in June, 1929; but it has declined by now to approximately 20,000 barrels daily. Total crude yield at Salt Flat had amounted to approximately 16,762,500 barrels by May 1, 1930, from 321 wells—an average per well of 52,219 barrels. While the main part of the present Darst Creek field is only a little over four miles long, Salt Flat has a total length of approximately 7½ miles. Salt Flat, however, is not as wide as Darst Creek, having a maximum width of about 1600 feet, whereas Darst Creek, as stated previously, attains a width of 3000 feet. Both Salt Flat and Darst Creek are producing oil which corrects to about 36 gravity, and the posted price for crude from both fields has been $1.15 per barrel since April 10, 1930. The productive zone at Darst Creek is around 2600 feet below the surface; at Salt Flat around 2700 feet. While proration restrictions at Darst Creek have prevented production from climbing to a high daily output, the field is expected to compare rather closely with Salt Flat in ultimate yield, producing area and number of wells.

Luling and Darst Similar

Incidentally, a further interesting

Southwest portion of Darst Creek field, with 20-acre units extending down to Guadalupe River. The survey line of J. K. Davis Survey, shown just below the river, runs practically due north to the river



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comparison is offered in the history of the old Luling field, the original Edwards lime producing area. The Luling field is parallel with Salt Flat and Darst Creek, but about six miles to the north. Its production, which is a heavier oil, testing around 28 to 29 gravity, and at present selling for 85 cents per barrel, is found at depths of 2100 to 2200 feet. It was discovered in August, 1922, reached a peak production of 42,085 barrels (some reports place the peak as high as 60,000 barrels); and up to May 1, 1930, had produced approximately 45,187,050 barrels of oil from 602 wells—an average per well of 75,061 barrels. Luling is eight miles long, and about one-half mile wide at its widest point. In 1929 it produced 4,260,000 barrels, and present daily production is around 9600 barrels. At both Luling and Salt Flat large quantities of water now accompany the oil production.

Following the discovery of oil at Darst Creek in July, 1929, voluntary agreements among major operators stayed off further activity until late in the year, by which time a plan had been worked out to restrict the field's production to available market outlet. From January 1, 1930, to May 1, production was held around 15,000 barrels daily, but on the latter date the official proration allowance of the field was increased to 23,829 barrels daily, with a total of 120 wells sharing in that allowance. For purposes of proration the field is divided into 20-acre units, and the rules of proration are such that it is usually advantageous to have only one well on any 20-acre unit. The 120 wells listed in the proration schedule May 1, were on 92 of the 20-acre units, total producing area of the field at that time being, therefore, 1840 acres. However, there were three wells, owned by L. C. Turman of Fort Worth, not included in the proration program, and in addition there were two groups of wells beyond the Darst Creek field proper to the northeast, namely in the Appling and Manford areas, not included under proration, as they were producing not from the Edwards lime but from the fault itself.

Length of Darst Creek Field

The northern limit of the main field is fairly well determined already, Magnolia Petroleum Company's J. M. Richburg 2, being the most northerly Edwards lime well. Completed about May 1, it gauged 455 barrels daily, producing from total depth of 2537 feet. Offsetting it eastward is Gulf Production Company's D. C. Malaer 1, but it is producing from serpentine. From those two wells to The Texas Company's A. E. Dowdy et al 1, most southerly producer in the field, is a distance of 22,000 feet, or approximately four miles. Whether or not the field will extend materially farther than its present southern limits is conjectural. The top of the Edwards lime in The Texas Company's Dowdy 1 is so low, minus 2111 feet, that it swings the other contours around, indicating possible closure and cutting off of the field. Top of the Edwards in Empire Gas & Fuel Company's Dowdy 2 and 3 was at minus 2103 feet. However, the well of The Texas Company may represent an irregularity, and it is altogether possible that production may extend on beyond Darst Creek to the Guadalupe River or farther. As previously stated, the surface trace of the fault extended beyond the river. Humble Oil & Refining Company is the principal lease owner along that unexplored south end of the fault.

Within the four-mile stretch comprising the present main field there are several wells on the edges of the productive area which are producing from formations other than the Edwards lime or which were abandoned as failures. However, they are not numerous.

Produces Also in Fault

Producers not completed in the lime were so located for the most part that they drilled directly into the sub-surface fault. Such was the case with Magnolia Petroleum Company's M. E. Roamel 1, (shown on accompanying map as S. M. Roamel 1), which astonished everyone concerned when it came in the latter part of March, 1930, as the largest producer ever completed in the Luling fault zone, flowing for an hour under proration gauge at the rate of 41,928 barrels daily. It is located on the far western edge of the north-central portion of the field, and was evidently drilled directly into the fault, as revealed by the fact that the west offset to it, Magnolia Petroleum Company's Roamel 3, drilled later, was clear over the fracture on the down-throw side, encountering top of the Austin chalk at the depth of 2536 feet, while the direct offset to the east, Louisiana Oil Refining Corporation's T. Dix 3, came in flowing 3300 barrels of oil daily from Edwards lime at total depth of 2577 feet, the top of the Austin chalk being at 2191 feet (or 1678 feet subsea). The "gusher" itself has total depth of 2322 feet, and is producing apparently from Austin chalk, or rather from crevices at the top of that formation. The top of the chalk is considered to be at 2315 feet (or 2202 feet subsea). From 2312 to 2315 feet there was a cavity, at 2315-17 feet was the hard formation regarded as uppermost portion of the chalk, and at 2317-22 feet another cavity existed. Six and five-eighths inch casing was cemented at 2260 feet. When this well was drilled it was considered a virtual wildcat, being almost 2000 feet west of production and its chances for success were generally discredited. As a matter of fact it is now seen that the field swings sharply westward at that point, and furthermore, the large producer is on the western edge. Following its completion offsets were drilled to the north, south, east and west, and all proved productive except the one on the west, which was mentioned above as being across the fault on the down-throw side. The territory between this group of wells and the former western limit of the field is now the scene of a large part of present Darst Creek drilling.

Several of the offsets to the above record producer, including Gulf Production Company et al's Dix-McKean A-1, encountered production in the Austin chalk but were drilled on into the Edwards lime.

Five Wells Not in Edwards

Aside from the large well of Magnolia Petroleum Company, wells producing from formations other than the Edwards include the following: Gulf Production Company's Malaer 1 on the north end of the present field proper is producing from serpentine at total depth of 2417 feet after logging Austin chalk at 2295-2407 feet. A little farther south Trinity Driller's Rand Miller 1-D is producing from serpentine and Taylor marl at total depth of 2403 feet, and the same interests' Rand Miller 1-C is producing from Taylor marl at 2404 feet. In the same vicinity Louisiana Oil Refining Corporation's (formerly United North & South Development Company's) Mrs. Pauline Roamel 1 is producing from Buda lime. Empire Gas & Fuel Company's Knoblock 2, located on the northwest, or down-throw side of the fault, was drilled in Taylor marl to 2502 feet.

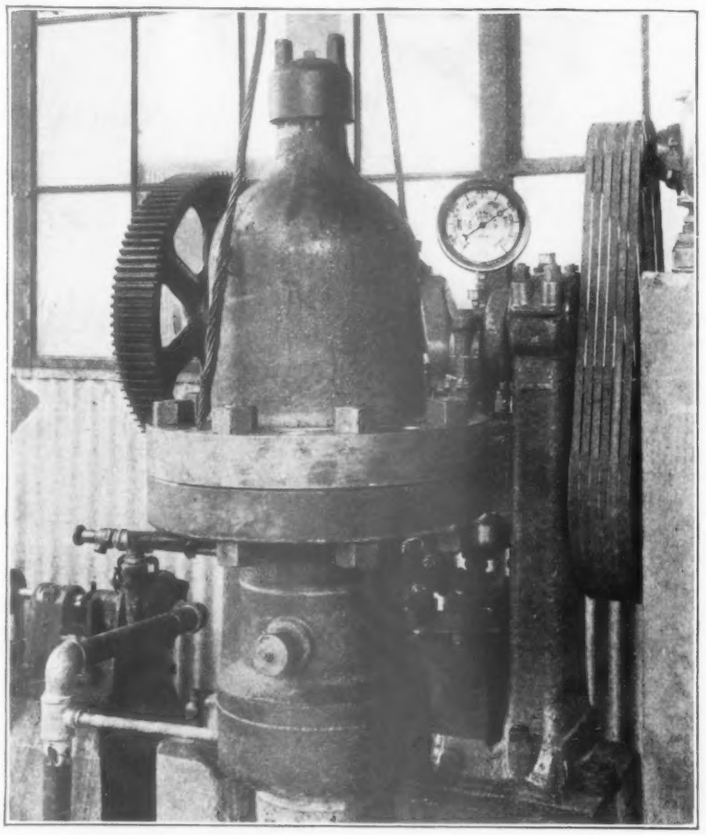
From the north end of the main Darst Creek field to the "Appling area" in the James Hodges Survey is almost exactly one mile. There are now five producing wells in that area, all producing directly from the fault from chalk formation, while offsets to the east and west proved dry. The first well of the group was Magnolia Petroleum Company's R. C. Appling 1, elevation 487 feet, which came in flowing 2500 barrels daily from chalk at total depth of 2532 feet, having encountered the top of that formation at 2519 feet. Directly southward on the fault are the other four producers in an almost straight line. Magnolia Petroleum Company's R .C. Appling 2 is producing from chalk at 2470 feet; the same company's S. Roamel 3 was completed as a 1710-barrel pumping well at 2530 feet after topping chalk at 2365 feet; and its S. Roamel 4 produced 139 barrels the first two hours from chalk at 2467-2495 feet. Cranfill-Reynolds Company's R. C. Appling 2 was completed for 200 barrels initial production from chalk at 2250 feet. The above five wells are not subject to proration regulations. The first well, Magnolia Petroleum Company's Appling 1, was completed October 10, 1929, and it continues to pump and flow around 800 barrels of oil daily, although some water has appeared.

It appears possible, at least, that production will continue to be found southward along the fault, on down to the main field.

Fourteen Dry Holes Drilled

By the opening of May, this year, 14 dry holes had been drilled around the main Darst Creek field and the Appling area. In the vicinity of the Appling production there have been seven unsuccessful tests, two on the west side

TESTED TO 7,000 LBS.



A new guarantee of SAFETY for... BAASH-ROSS PRESSURE FITTINGS!

NOW THAT gas pressures, too, are going to "new highs"... blowout preventers, tubing and packing heads, and all types of pressure control equipment must meet enormously increased demands...

And safety and dependability must be known in advance!

Hereafter all Baash-Ross equipment designed for high pressure control will be tested under any hydrostatic pressure required, up to 9,000 pounds, on a specially designed testing machine... shown above subjecting a Baash-Ross tubing head to 7,000 pounds pressure...

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To the Hand a Drilling

TO the operator's hand the Climax Triple-Fuel Engine is a sweet-running power plant—with almost the feel of steam.

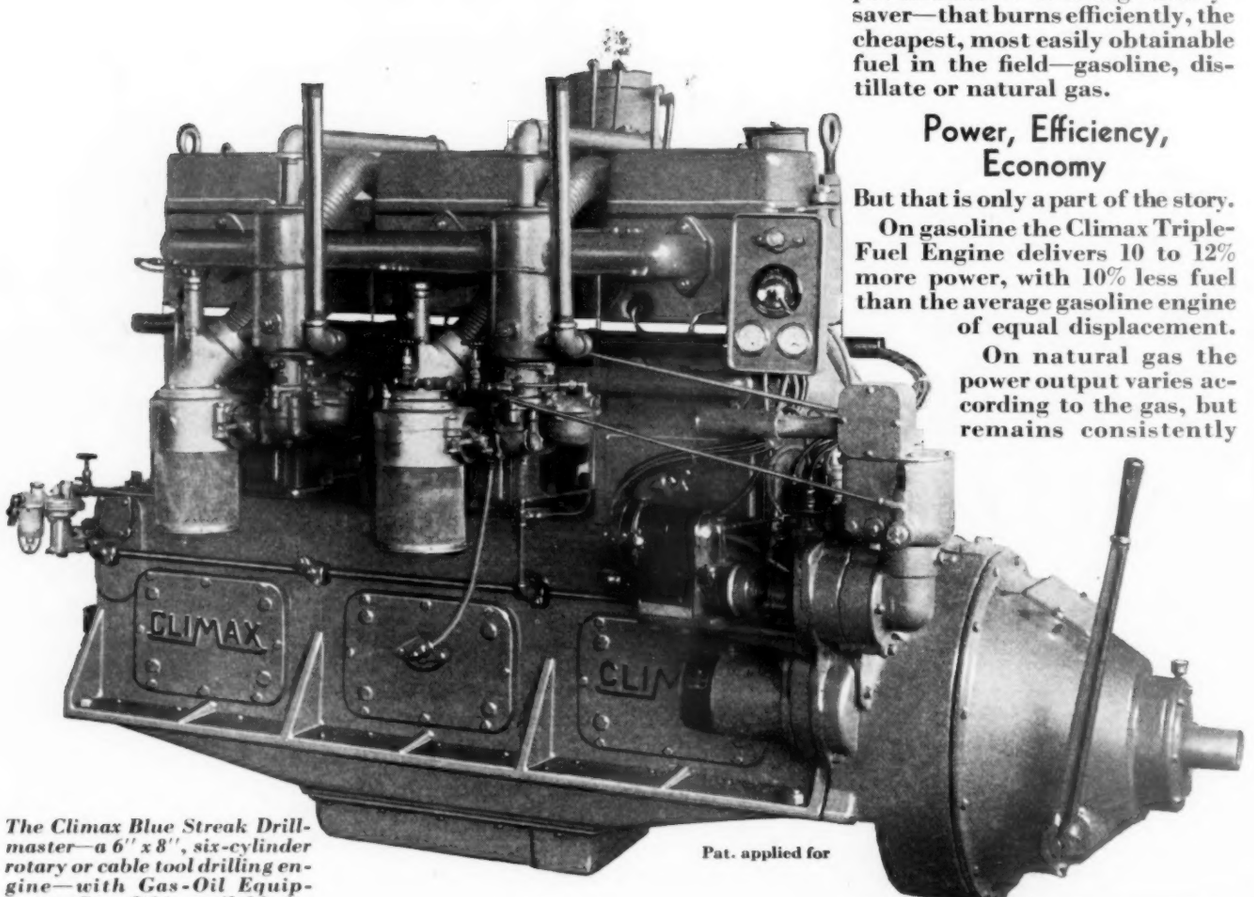
To the drilling contractor's pocketbook it is a big money-saver—that burns efficiently, the cheapest, most easily obtainable fuel in the field—gasoline, distillate or natural gas.

Power, Efficiency, Economy

But that is only a part of the story.

On gasoline the Climax Triple-Fuel Engine delivers 10 to 12% more power, with 10% less fuel than the average gasoline engine of equal displacement.

On natural gas the power output varies according to the gas, but remains consistently



The Climax Blue Streak Drill-master—a 6" x 8", six-cylinder rotary or cable tool drilling engine—with Gas-Oil Equipment. Gas-Oil is available for all Climax Blue Streak Engines, fours, sixes and eights from 72 to 200 h. p.

Gas-Oil Equipment handles either gasoline or distillate—for natural gas a small change involving a gas valve is all that is needed.

Pat. applied for

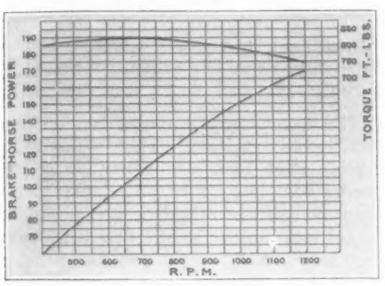
Blue Streak

GAS

Sweet-Running Engine

to the pocketbook a big money-saver that burns the cheapest, most easily obtainable fuel—gasoline, distillate or natural gas

higher than that delivered by ordinary "gasoline" engines adapted to this fuel—while valve and cooling troubles are "licked" completely.



Here are power curves on the Drillmaster with gasoline for fuel—the lower curve is horse power, which you'll note is easily 10 to 12% higher than the average gasoline engine—the upper curve is torque, representing the ability to pull at low speeds.

On distillate, horse power and performance figures closely match those of the average engine burning gasoline.

Such facts sound like rank overstatements.

So we present them as conservatively as we can, based upon two years of actual tests in our own and independent laboratories.

And if you'll examine the radical design that makes Blue Streak Combustion, you'll understand how Triple-Fuel performance is gained.

Blue Streak Combustion

The first words of the Triple-Fuel Announcement were really written more than three years ago. At that time Climax Engineers set out to find the secret of perfect drilling engine performance in the actual burning of the fuel within the cylinders.

They reasoned that more nearly perfect combustion would make commercial gasoline yield more horse power and flexibility—and that it would burn natural gas and cheap distillates with no great loss in power or performance.

The result is Blue Streak Combustion.

To 36-40° Baumé Distillate

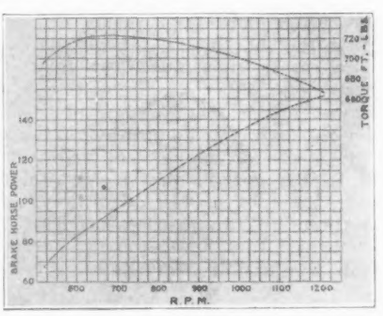
Now Climax Engineers announce the equipment which they have developed for making Climax Blue Streak Engines burn distillates of 36-40° Baumé—and burn them successfully on actual cable tool and rotary drilling—or pumping and miscellaneous work.

The equipment is simple, consisting of Gas-Oil Carburetor, Manifold and Heat Control.

There is no solid fuel injection—and no resemblance to heavy Diesel-type or oil engines.

And natural gas can be used with a few simple changes.

There are no unusual handling or servicing problems.



Here are power and torque curves on the Drillmaster with 36-40° Baumé distillate for fuel—note that both horse power and torque curves match closely those set by the average gasoline engine burning gasoline.

And you men in the field can now have a drilling engine with all the simplicity and portability of the standard "gasoline" engine.

—with the "feel" and tool handling characteristics that closely approach steam power.

—with the ability to burn low-cost distillate, or natural gas, or gasoline, whichever one is most readily and cheaply available.

Information gladly sent upon request.

OIL

CLIMAX ENGINEERING COMPANY

75 West 18th Avenue CLINTON, IOWA

of the fault and the others on the east. The two on the west were Cranfill-Reynolds Company's Appling 1 and Magnolia Petroleum Company's S. Roamel 2. Those directly east of the fault were the S. Roamel 1 of Magnolia Petroleum Company and The Texas Company's S. Roamel 1, Magnolia Petroleum Company's Echols 1 and 2, and Mundine Investment Company's Echols 1.

Magnolia Petroleum Company's H. & G. Zedler 2 was a wildcat failure located approximately a mile south of the Appling area and the same distance east of the north end of the main field.

The other dry holes were around the field proper. Magnolia Petroleum Company's H. G. Goldman 1 was drilled 1000 feet east of production in the main field, and was abandoned at 3262 feet. United North & South Development Company's Pauline Roamel 2 and 3, in the north edge of the field were abandoned non-productive. Tests too far west, across the fault on the downthrow side included: Humble Oil & Refining Company's A. E. Dowdy 2, abandoned at 2644 feet, Magnolia Petroleum Company's M. E. (or S. M.) Roamel 3, and Cranfill-Reynolds Company's Denman 1.

Two miles northeast of the "Appling area" are the two producing wells of Simms Oil Company and Penn Oil Company of the "Manford area." Like the wells of the "Appling area," they are producing from fault crevices. Manford 1, the first of the two "Manford area" wells, was completed August 28, 1929, at 2418 feet, and it is still producing 200 barrels daily.

Drilling at Darst Creek is all done with rotary rigs, and most of it has been done by contractors, the usual charge for drilling being around $2.50 per foot with steam rigs, with the oil companies furnishing fuel and water, or $3.00 per foot, electric rigs. However, there have been only three electric rigs in the field, owned by Al Buchanan, Lind & Hartmangruber, and Gulf Production Company.

Cost About $22,500

The total cost of a completed well at Darst Creek equipped for pumping, is around $22,500, including the following items: labor (drilling), $7000; material, $5075; transportation, $500; fuel, water, rig rental, and so forth, $1425; electric pumping unit and pump house, $6500; rods and tubing, $1900.

There is only limited gas pressure in the field, and many of the wells are pumping, by means of electric units. Electricity is furnished by Central Power & Lighting Company out of San Antonio. Even newly completed wells are usually put on the beam at once, one factor that is considered in that regard being that wells will produce more that way than by flowing frequently, and inasmuch as allowable production under proration depends upon potential production as revealed by actual gauges, it is to the producer's advantage to put the well on the pump before gauging it.

Texas Pipe Line Company and Humble Pipe Line Company each have six-inch pipe lines serving the field; Magnolia Petroleum Company has a four-inch line from the field to its tank farm at Luling; Grayburg Oil Company is taking L. C. Turman's production through a small line connecting with its trunk line; and Louisiana Oil Refining Corporation, which recently purchased the producing properties of United North & South Development Company, has a 3½ mile six-inch line from the field to a 50-car railroad tank car rack at Sullivan, whence it is making shipments to its refineries near Shreveport, Louisiana.

Under the proration program which is in effect at Darst Creek through voluntary agreements among the producers, the production is limited to market outlet, and as a basis for dividing the outlet equitably among themselves the field is divided into 20-acre units, with allowable production determined 50 per cent by the number of units in production and 50 per cent by the average potential of wells on those units.

F. C. Sealey of The Texas Company, Houston, is chairman of the Darst Creek Operators' Executive Committee, the body in charge of administration of the proration program, and H. H. Fitzpatrick is proration umpire, maintaining headquarters at Seguin.

Production Held Down

By reason of rigid enforcement of the proration regulations, total production at Darst Creek had not quite reached 2,000,000 barrels by May 1, 1930. The only production prior to January 1, 1930, was from two wells of The Texas Company, the discovery well, Dallas Wilson 1, and an offset to it, Lemmie Anderson. Together they had produced 147,181 barrels by the beginning of the new year, The Texas Company being allowed to produce them prior to the official commencement of the proration program because of having discovered the field. Following is a summary of production of the field to May 1, 1930, the figures for 1930 being estimates of the American Petroleum Institute, while those for 1929 represent actual production.

Period	Bbls. Prod.
1929 (6 months)	147,181
January, 1930	442,100
February	499,650
March	484,300
April	452,000
Total to May 1, 1930	1,985,231

The discovery well from completion on July 18, 1929, to April 1, 1930, had produced 141,717 barrels; and the offset to it, mentioned above, from completion in August, 1929, had produced 90,944 barrels up to April 1, 1930.

The 128 wells included in the proration program for the period May 16 to May 31 were credited with combined potential production of 245,864 barrels daily. The actual possible production of the field is considered over-rated by 50 per cent or more, however, by that figure, inasmuch as it is arrived at largely by carrying forward the flush output of completions from month to month, relatively few of the wells being regauged at the beginning of each new semi-monthly proration period. Under the above schedule The Texas Company had the greatest number of wells, 34 producers with combined daily potential of 51,477 barrels, and earning daily production allowance of 5408 barrels; Humble Oil & Refining Company was next, having 27 wells with combined potential of 27,377 barrels, earning daily allowance of 3454 barrels; Gulf Production Company had 21 wells with combined potential of 55,854 barrels and allowance of 5227 barrels daily; Magnolia Petroleum Company had 14 wells, combined potential 57,813 barrels daily and 3129 barrels daily allowance. Other producers, with number of producing wells each, were as follows: Louisiana Oil Refining Corporation, nine wells; Sun Oil Company, seven; Empire Gas & Fuel Company, six wells; Trinity Drillers, four; Abercrombie et al, two; Kirby Petroleum Company, Penn Oil Company, Stroube & Stroube, one well each.

The accompanying map shows all completed wells at Darst Creek with the exception of a few very recent ones. Producers completed during the first half of May and consequently participating in proration allowances for the first time under the May 16-31 schedule include Abercrombie et al's T. Dix 4 (formerly No. 3), which gauged 2190 barrels daily from Edwards lime at 2567 feet; Humble Oil & Refining Company's Sallie Wilson 6, a 720-barrel well at 2640 feet, and the same company's Yates Wilson 5, initial production 660 barrels daily at 2637 feet; Louisiana Oil Refining Corporation's Dix-McKean 3; Magnolia Petroleum Company's M. E. Roamel 2, a 1440-barrel producer at 2573 feet; Sun Oil Company's Knoblock 7, rated as a 2592-barrel well; and The Texas Company's Dallas Wilson 7, a 900-barrel producer at 2632 feet, and Dallas Wilson 8, which produced at the rate of 780 barrels daily from 2602 feet on proration gauge.

On May 15 there were approximately 15 rigs in operation in the main field, and several tests were in progress in the two nearby areas that are producing from the fault.

Dallas, Texas.—A study of the Claiborne section of the Tertiary in the East Texas geosyncline is to be available to all geologists through a field trip by bus that is being sponsored by the Dallas Geological Society. The cars will depart from Dallas at 11:30 A. M. May 24. The party will spend Saturday night, May 24, at the Blackstone Hotel, Tyler, and be in Palestine at noon Sunday, May 25. The return to Dallas is scheduled for Sunday night. G. Moses Knebel and E. A. Wendlandt, geologists for Humble Oil & Refining Company, will direct the party over the district. The regional stratigraphy and structure will be explained as the trip progresses, and time will be given for the collection of samples.

IF TIME IS OF THE ESSENCE ...YOU'LL WANT TO CALL THE NORVELL-WILDER MAN

In the sometimes heavy but always expressive language of the law they use a term in relation to fulfillment of contracts that goes something like this, "If time is of the essence—"

It means, in the language of business, if you're in a hurry—if you're down to where time is important—if you've got to get something done quick—and if it isn't done quick there's no use doing it. That, your honor, is when time is of the essence.

Norvell-Wilder men know very little about any kind of essence. But they do know that when an oil man wants something quick he wants it right away. They get busy.

A FEW OF THE WELL KNOWN LINES AVAILABLE TO YOU THROUGH NORVELL-WILDER

- *Alemite Company*
- *A. M. Byers Company*
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- *Chain Belt Company*
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- *Hercules Motors Corporation*
- *Jefferson Union Company*
- *Jones & Laughlin Steel Corporation*
- *Kennedy Valve Manufacturing Company*
- *Kerotest Manufacturing Company*
- *Lunkenheimer Company*
- *Wright Manufacturing Company*

Norvell-Wilder *Supply Company*

BEAUMONT HOUSTON SHREVEPORT FORT WORTH

Extent and Value of German Oil Deposits Unknown

(*Continued on page 25*)

petroleum products, whether imported from abroad or refined locally in bond, have been calculated as equivalent to $3.75 per barrel of crude, to which must be added Atlantic tanker rates, plus Gulf Coast or Caribbean crude values, to arrive at the basic figure representing the minimum value of indigenous production. The tendency of German law-makers, goaded on as much by the necessity of finding new tax sources as by a desire to foster the manufacture of synthetic gasoline and to portect the domestic oil industry, is to maintain these duties, as recent increases in customs charges will show.

Domestic production is increasing steadily behind these barriers. Current averages exceed 2500 barrels per day, which is 25 per cent above the daily average ruling during 1929. Such increases have been fairly consistent during recent years, as is shown by the following statistics:

German Crude Production

Year	Metric Tons
1924	59,299
1925	79,104
1926	95,388
1927	96,883
1928	92,076
1929 .....a	104,000

a—In round numbers.

In addition, Germany produces more than 1500 barrels per day of synthetic gasoline.

Domestic production, however, represents only about 40 per cent of the country's petroleum requirements. Germany imported over 17,500,000 barrels of petroleum products during 1929, this total consisting chiefly of gasoline and refined products from the United States and crude, distillates and other products from Venezuela, Mexico, Roumania and Russia.

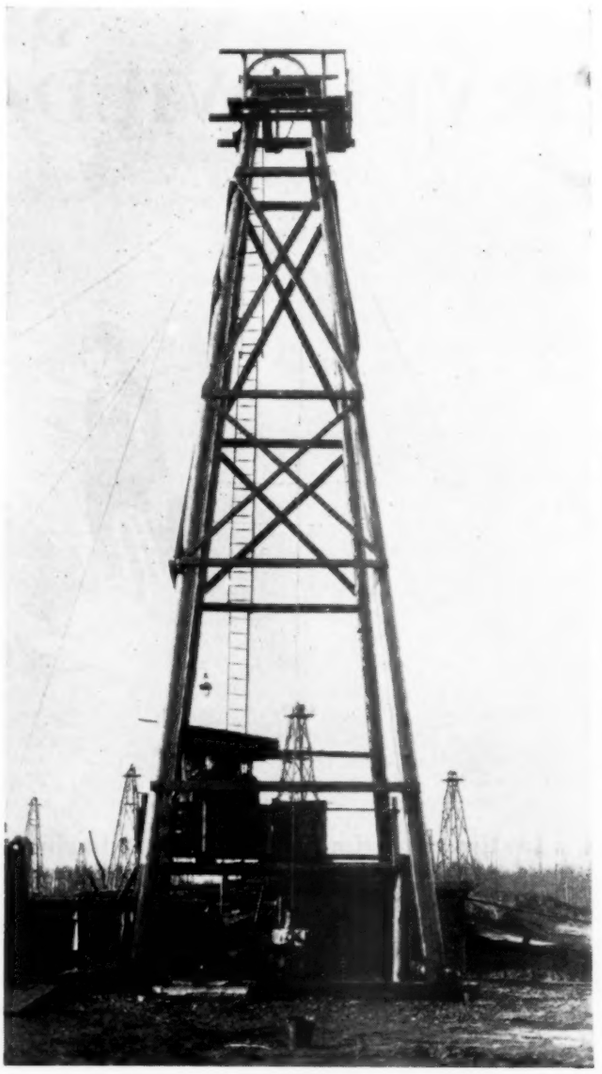
Germans Are Conservative

German operations have, until quite recently, been confined to the immediate crests of domes where oil showings occur naturally or have been found as incident to prospecting and mining for salt, potash, and other minerals. Wells are closely spaced, even crowded; and there has been little tendency to "step out" and test the flanks of the known structures. Land was not regarded as valuable or worth the payment of rentals until actually proven, with the result that a great deal of close-in acreage—using that term in its American application—has lain fallow.

As illustrative of the relative values placed by German mining interests upon salt and oil, the custom of rewarding successful drilling crews was explained to us. It seems that discoverers of salt or kali (potash) are customarily given all the champagne they can drink, while finders of petroleum are rewarded only with ordinary wine.

It is explained that German engineering talent has heretofore not been applied to oil. Thousands of prospect holes have been drilled in search of salt, potash, coal, and other minerals; and, upon first thought, it seems inconceivable that any consequential oil deposits could have been overlooked. Yet it must be remembered that most of these holes were drilled by men having little or no interest in oil. It was, as explained to us, not unlike conditions obtaining in the United States, where many deposits of potash, coal, and other minerals have been passed up in our frantic search for oil.

It is said that many of these prospect holes were drilled on footage basis by contractors whose agreements called for completion of the work upon encountering either salt or oil, the theory being that the presence of oil indicated the flank of the structure and that the location had missed the crest or the point where salt would

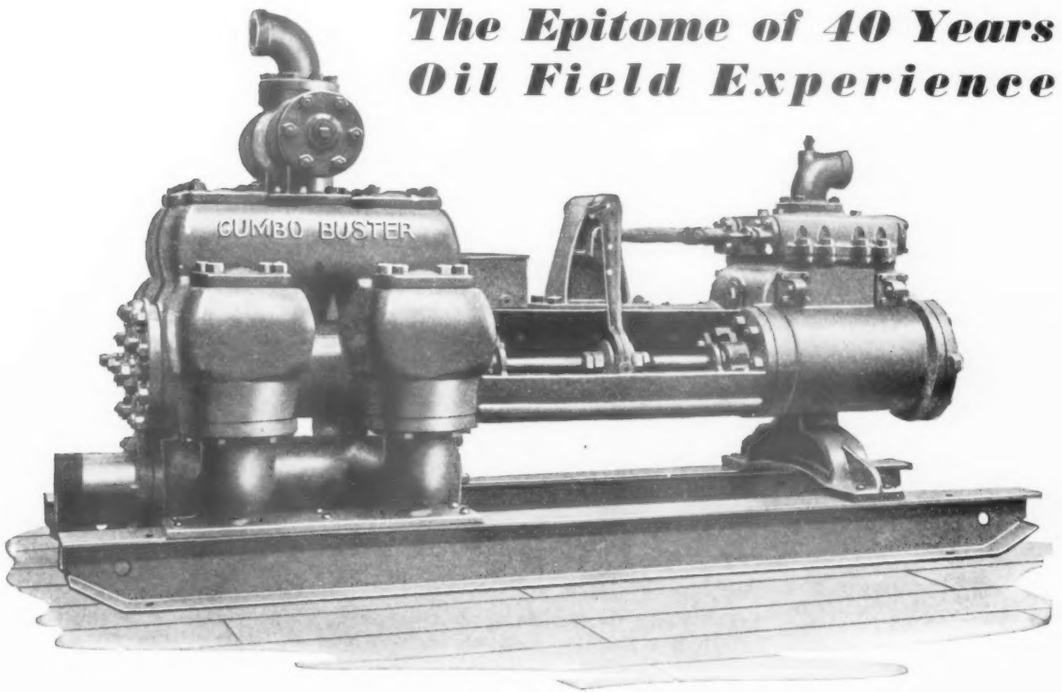


Left: Bailing for production, Nienhagen field, Germany. Below: Mining salt around a salt dome in the Hanover.

A CORRECTION

The Gumbo Buster ad appearing on May 9 stated that the GUMBO BUSTER Type "J" pump was for use when steam pressure did not exceed 150 pounds. This should have read 250 POUNDS.

The Epitome of 40 Years Oil Field Experience



Gumbo Buster
Type "J"

Designed for use on wells at any depth, when the steam pressure used does not exceed 250 pounds. Has steel skids; four-piece fluid end; balanced steam piston valve.

Size: 12"x6¾"x16". Diameter of steam cylinder 12". Diameter of fluid end liner 6¾". Length of stroke 16".

Weight: 10,850 pounds.

Fluid End: Made in four pieces. The suction manifold and two cylinders are made of semi-steel. The discharge manifold is an electric steel casting. Any one of the four pieces can be easily replaced.

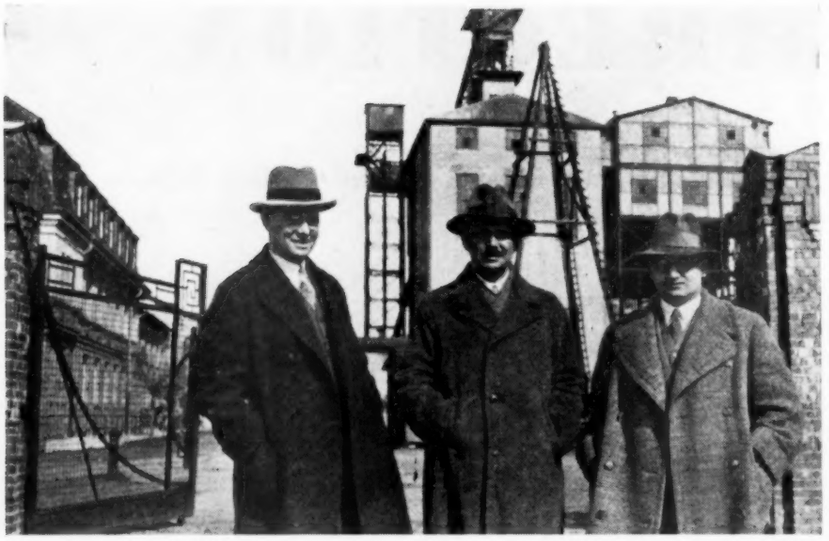
Steam End: Made of semi-steel. The piston, valve cage, steam end and steam end leg are cast separately and any one piece can be replaced.

Lubrication: All external moving parts oiled by the Alemite system.

Republic Supply Company

OIL AND GAS WELL SUPPLIES
Cable and Rotary Tools

GENERAL OFFICES: HOUSTON, TEXAS



Party of German engineers inspecting the oil-mining operations of the Deutsche Erdol-Aktiengesellschaft at Wietze, Germany.
Left to right: Gustav Rautenkranz, Engineer representing Alfred Wirth & Co.; Engineer Hubrig, in charge of mining operations for D. E. A,; F. Kupka, Engineer representing Alfred Wirth & Company, Erkelenz, Rhineland.
The superstructure in the background houses the hoisting and washing apparatus. Oil sand is brought to the surface and washed in hot water.

be found nearest the surface. Many of these contractors are accused of having mudded off and concealed showings of oil so as not to lose their jobs prematurely. One of the foreigners now interested in German oil possibilities has received many such reports from old bore-masters in response to his offer of rewards for information regarding oil shows. It has been demonstrated that gratuities of 50 to 100 marks have proven a wonderful stimulant to old memories. Having cast suspicion on German contractors, far be it from us also to impugn the testimony of veteran German drillers; but surely one or the other must stand convicted.

Accidents Involved

Reference to the many showings of oil found in connection with salt mining operations brought forth tales of two serious accidents with consequent loss of life caused by oil breaking into salt mines. We saw samples of extremely light oil recovered from pockets in the kali, or potash, deposits.

One of the sights usually shown to foreign visitors is of a series of seeps near Hordorf. Peasant women paid by the government during the war emergency excavated some 15 or 20 shallow pits from which several hundred barrels of oil were recovered. At the close of the war the pits were sealed; and no further development has occurred.

One of the most remarkable stories that one hears is that a commercial gas well was drilled at Nuengame in 1913, its production having been used in the city of Hamburg for many years; and yet no further effort was made to explore and exploit the gas-yielding formation. The well's production record is given in part as follows:

Year	Millions of Cu. Meters
1913	8.2
1914	19.3
1915	21.9
1916	30.00

One fields many interesting tid-bits in delving into the history of German oil. We learn that the first known record of the occurrence of oil in Germany was made in the year 1013; that the seepages at Wietze were described in a book published in the year 1766; that German engineers probably preceded Americans in experimenting with the rotary method, as we find that the rotary-slush system was used here in 1883.

Shallow Drilling

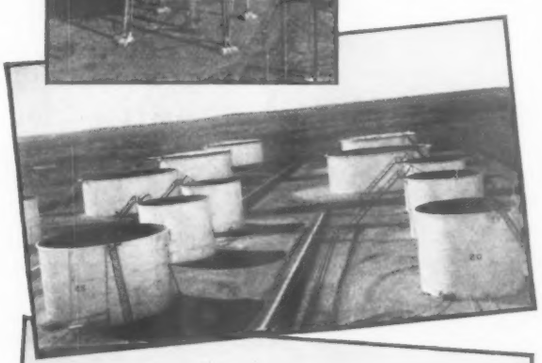
The average depths to which German oil operators are accustomed to drill impress an American as being very shallow. Productive horizons range in depth from 715 to 1140 feet at Wietze, from 650 to 1950 feet at Oberg, and from 1300 to 2340 feet at Nienhagen. The deepest well in Germany, a dry hole located at Nien-

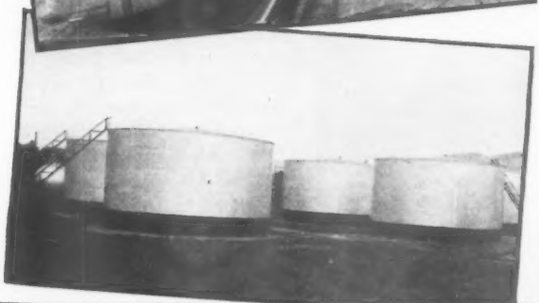
Photo by A. Beeby Thompson, London

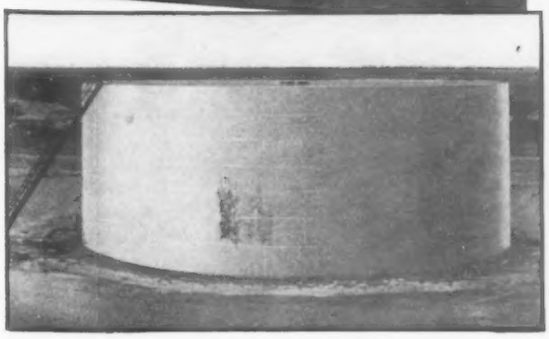
Nienhagen Field, Germany

WIGGINS ROOFS— STORAGE TANKS— ELEVATED TANKS *for*

Pipe Line Stations







Left: 100,000-gallon ellipsoidal-bottom tank at Houston, Tex. Below: Horton storage tanks, equipped with cone roofs and with Wiggins Roofs.

GET our quotations on pipe line station storage tanks, elevated water tanks, and Wiggins Roofs for stopping fire and evaporation losses, erected complete all on one contract.

Wiggins Roofs are used to reduce evaporation and eliminate fire hazards without accessory equipment and operating expense. Several major pipe lines are completely equipped with them.

The Wiggins Floating Roof is particularly suitable to tanks that are filled frequently, such as pipe line stations checking tanks, and the Wiggins Breather Roof meets standing storage conditions. Either type of roof pays for itself through savings in a few months.

Water service at pumping stations can frequently be provided most satisfactorily by the provision of a gravity supply in a Horton tank. Dependability is one of the principal advantages attained by using elevated storage since gravity never fails. An elevated tank can be piped to provide water both for fire protection and general service.

Our four plants, including the newly acquired one at Birmingham, enable us to give prompt delivery on work going to any location. Our nearest office will be glad to furnish full information on all our products and supply quotations.

CHICAGO BRIDGE & IRON WORKS

Dallas	3338 Magnolia Bldg.	Cleveland	2241 Union Trust Bldg.
Birmingham	1538 Magnolia Bldg.	New York	3144 Hudson Terminal
Atlanta	2155 Rhodes-Haverty Bldg.	Philadelphia	1613 Jefferson Bldg.
Chicago	2142 Old Colony Bldg.	Boston	1518 Consol. Gas Bldg.
Detroit	1515 Lafayette Bldg.	San Francisco	1050 Rialto Bldg.
	Havana, Cuba Apartado 2507		

WIGGINS ROOFS *Stop* EVAPORATION LOSSES

hagen, reached a depth of 5850 feet. It is regarded as a marvelous achievement, which it doubtless is, considering the normal capacity of the equipment with which is was drilled. Very few holes have exceeded 3000 feet in depth. A number of different oil-bearing formations are usually found in each field.

While the daily average production of individual wells is very low, particularly in the older fields, production is long - lived and, under the circumstances, apparently profitable.

Wietze is an old and depleted field, if one may judge by American standards, yet the Duetsche Erdol Aktiengesellschaft expects to recover many more thousands of barrels of oil by means of its mining process. An exceptional well drilled in this field in 1915 had an initial production of 420 barrels per day and is still yielding 55 barrels daily. Some of these old wells have been producing steadily for 30 years or more. The field as a whole has produced upward of 11,000,000 barrels to date, or about 10,000 barrels per acre.

Flowing wells are being brought in from time to time at Nienhagen-Hanigsen, a field which was recently extended and which is now accounting for about one-third of German production.

German Oil Interests Combine

The biggest single factor in the production branch of the German oil industry is the Deutsche Petroleum Aktien-Gesellschaft and its subsidiary, Deutsche Erdol Aktiengesellschaft, which represent a combination of German petroleum interests. Before the war the Deutsche Petroleum Company controlled the Steaua Romana and Pechelbronn companies and was active in the production and distribution of petroleum products throughout the European market. Its properties in Alsace, Roumania, England, and Belgium were lost by sequestration; and its production and refining operations are now confined within the German boundaries. The stock of the D. P. A.-G. is controlled by German banks headed by the Disconto Gesellschaft and by the Ruetgerswerke Aktien-Gesellschaft, known as the chemical trust. D. P. A.-G. is associated with Anglo-Persian Oil Company in the ownership of "Olex" Deutsche Petroleum - Verkaufs - Gesellschaft m.b.H., a large European distributing agency.

Deutsche Erdol Company's base of operations is at Wietze, where it operates an oil mine from which about 700 barrels of crude per day is recovered by mining and washing the oil sand with hot water. The company operates about 700 wells in addition, which have an average production of less than one barrel per well per day, the total production from this source approximating 460 barrels daily.

The next most important company is the Gewerkschaft Elwerath, whose headquarters are at Hannover and whose operations are at Nienhagen, one of the fields in which flowing wells are secured. Erdol-Bergbau A.-G., whose properties are at Oberg, a field whose development dates from the post-war period, and where important additional discoveries have been made within recent months, figures prominently in the development of that district. Anton Raky, a drilling contractor and manufacturer of drilling equipment, takes a leading part in wildcat or prospecting operations; and has several important discoveries to his credit.

German Refining Industry Divided

The refining industry of Germany is divided between the Deutsche Petroleum, Shell, Standard Oil Company of New York, Vacuum Oil Company and independent groups. The most important plants are those of the Deutsche Erdolwerke, located at Wilhelmsburg near Hamburg, and controlled by D. P. A.-G.; the Mineralolraffinierie Mannheim, at Rheinau, controlled by the same interests; the Suddeutsche Oel-u Metanolwerke, at Frib.-en-Brisg., the Erdolwerke Dollbergen, at Dollbergen and the Mineralol-Raffinerie, of Emmerich, all controlled by the Deutsche Gasolin A.-G. (I. G. Farbinindustrie A.-G.); the Mineralol-Raffinerie Aug Korff, of Breme, controlled by the Standard; the Deutsche Vacuum Oel, of Hamburg; the Mineralolwerke Rhenania, a Shell plant located at Dusseldorf; the Oelwerke Julius Schindler, of Hamburg; and the Mineralolwerke Albrecht & Co., of Hamburg, an independent concern.

Anticipate Continued Growth

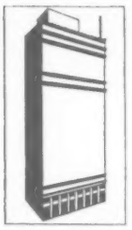
Well-informed German engineers anticipate continued steady growth in the oil industry of their country; but they do not expect that the Northern Plain will ever equal the production records of the Gulf Coast region of Texas and Louisiana. Sand conditions are described by these authorities as being irregular, lenticular, and generally unsatisfactory. Pay sands are poorly-saturated and occur in narrow belts among highly fractured and steeply dipping formations—conditions which contribute very materially to the hazard and expense of drilling.

German crudes are generally almost devoid of gasoline. They yield a small percentage of kerosene; and are refined for their gas-oil, lube oil, and asphalt content. Some of the new deep sands recently discovered yield oil of mixed and paraffin base, having a green fluorescence, ranging up to 35° A. P. I., and containing up to 15 per cent of gasoline. Wietze crude is of asphaltic base and ranges from 19° to 29½° A. P. I. Nienhagen oil averages around 23° to 24° and Oberg crude ranges from 28° to 35°.

A section of the main highway between Hannover and Hamburg. Good roads radiate throughout the German oil-producing districts.

Magnolia Starts Gasoline Through Pipe Line

San Antonio, Texas.—Intercity movement of commercial gasoline through pipe line was started May 8 when Magnolia Petroleum Company began pumping gasoline from its refinery at Luling to bulk stations at San Antonio and intermediate points. The company has a 50-mile three-inch welded line extending from the refinery to this city, rated at 5000 barrels daily capacity. The line has been completed since April 10, but actual operations were deferred until the refinery completed modernizing equipment. The plant is handling about 4500 barrels crude daily. In spite of the precaution taken to keep the line clean, and the fact that it was washed inside before leaving the mill, Magnolia Petroleum Company anticipates having to tank car the first 1000 barrels of gasoline to the refinery because of discoloration.



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. . . . legal expenses are very low with no brokerage fees, and the borrower can secure his money at a cost that is lower than usual in the case of such loans.

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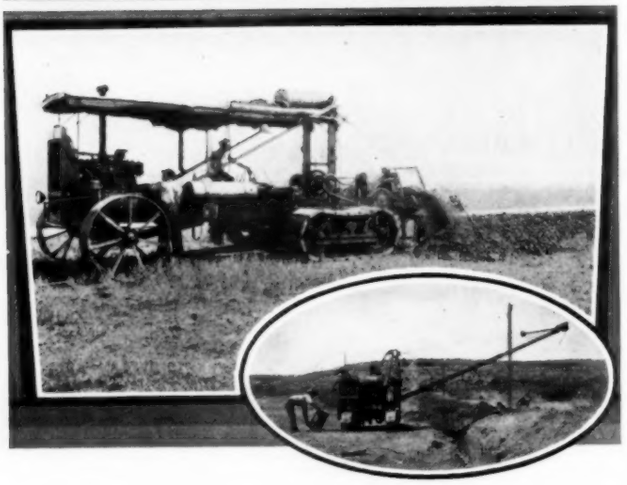

Model 32 *Wheel-Type* Ditcher

A ruggedly built ditcher is Model 32—and adapted particularly to cross-country work under every practical condition for pipe line construction. Its general design appeals strongly to those favoring transmission controls.

Chief of its preferred operating features are. Practically *all transmission* control; rigid digging wheel, grading accurately and driven from both sides to equalize pull; 16 digging speeds, ranging from 18 inches to 19 feet per minute; power steering; 71 h.p. heavy-duty Waukesha motor; Alligator (crawler) wheels with traction brakes for safe operation on grades; 15½ to 30 inch cutting widths; and 6½ foot cutting depth. Many others.

Write for Model 32 complete specifications and price.

Model F *Service* Backfiller

This little Buckeye offers remarkable economy in refilling both small main and service trenches. Measuring only 69 inches overall in width (without boom), 7 feet 6 inches in height and weighing but 4 tons, it is easily and quickly maneuvered in close quarters or transported from one job to another. "Back-action" scraper permits operating from the spoil-bank side of the trench. Traction brakes allow safe operation on grades. Ask for Model F price and specifications—both will interest you.

The Buckeye Traction Ditcher Co.
FINDLAY, OHIO

There's a Buckeye Sales and Service Office near You

for over thirty years **Buckeye**

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Immediate service is a hidden profit—take it! The economics of *place* is undisputed. Careful selection coupled with desired delivery denotes sound progressive principles in buying.

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Canadian Branch at St. Catharines, Ont.

There is a complete stock of Yale Hoists near you

YALE **Hoisting and Conveying Systems**
YALE MARKED IS YALE MADE

COMPLETIONS FOR PAST WEEK IN U.S. FIELDS

CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
LONG BEACH—		
George F. Getty, No. 28	250	6725
James Oil Co., No. 5	600	6900
MARICOPA FLATS—		
Doyle Pet. Corp., Son Crail 8	2600	3612
POTRERO—		
Taylor Drilling Co., Murphy 1	1400	5335
RICHFIELD—		
Continental Oil Co., Stern 2	300	4444
SANTA FE SPRINGS—		
Shell Oil Co., Thompson 6	20	8097
Associated Oil Co., Dewenter 7	425	7900
Wilshire Oil Co., Crawford 2	40	7955
Union Oil Co., Bell 55	700	7940
VENICE—		
Ohio Oil Co., Gun Club 2	1550	6150
VENTURA—		
Associated Oil Co., Lloyd 93	3800	7320
Shell Oil Co., Edison 26	800	7130

KANSAS

Company, Well and Location	Initial Production Bbls.	Depth
BUTLER COUNTY—		
Colorado-Kansas Pet. Co., Holcomb 2, ne sw nw, 8-29-4e	*	2235
National Refining Co., Snively 1, c nw nw, 25-23-6e	*	2582
COWLEY COUNTY—		
Binkley and Crow, Powers 1, c se nw, 9-32-5e	¶¼	760
Crow et al, Lowe 1, se ne ne, 8-32-5e	¶¼	748
Luett and Sheets, Wilson 1, nw c, 7-30-7e, bdn lcn.		
GREENWOOD COUNTY—		
Syndicate Oil Co., Shook 4, cnl sw nw, 6-24-12e	25	1787
Phillips Petroleum Co., Patterson 2, nw se sw, 22-23-11e	50	1993
Empire O. & R., Nesbitt 2, csl nw nw, 6-24-12e	*	1930
McPHERSON COUNTY—		
W. C. McBride, Inc., Voshel 4, ne c 9-21-3w	835	3379
W. C. McBride, Inc., Voshel 5, sw ne ne, 9-21-3w	1295	3344
SUMNER COUNTY—		
E. B. Shawver et al, Curry 2, c nw sw, 26-34-2e	¶2¼	1566
Slick, Pryor & Lockhart, Peasel 1, nw c 33-31-1w	90	3715
Lee Payne et al, Frederick 1, ne sw se, 12-31-2e	*	3598
Champlin O.&R., Murry 1, nw c se, 9-30-2w	*	4221

OKLAHOMA

Company, Well and Location	Initial Production Bbls.	Depth
CARTER COUNTY—		
Gilmer Oil Co., Hernstadt 2, ne nw ne, 26-1s-3w	10	2697
Magnolia Pet. Co., Gill 3, se sw ne, 23-1s-3w	35	2520
CREEK COUNTY—		
Holmes and Burton, Davis 1, sw se se, 19-19-10e	75	2216
Phillips Pet. Co. and Gled Oil Co., Koch 6, sw se ne, 20-19-9e	125	2232
Pure Oil Co., Roberts 1, sw c, 30-17-9e	*	3567
O. M. Irelan et al, Bible 1, ne c sw, 20-19-9e	180	2295
GARFIELD COUNTY—		
Continental Oil Co. et al, Brown 1, cel ne nw sw, 10-20-4w	750	5948
JEFFERSON COUNTY—		
Sutherland Oil Co., Riverbed 1, nw c ne ne, 10-7s-5w	60	1102
KAY COUNTY—		
Carter Oil Co., Jamison 1, ne c, 17-27-1w	75	3621
KIOWA COUNTY—		
Parker et al, Fuqua 1, sw c ne, 18-6-16w	10	455
MARSHALL COUNTY—		
F. W. Merrick, Null 16, se c nw nw, 24-5s-5e	95	615

Tabulation and Comparison on Page 42

Company, Well and Location	Initial Production Bbls.	Depth
Magnolia, Coatsworth 2, nw c se se se, 30-5s-6e	65	584
Bilbo Oil Trust Co., Heath 1, sw c ne ne, 25-5s-5e	*	766
Jordan et al, Penn Mutual 1, ne nw se, 17-5s-5e	*	704
MUSKOGEE COUNTY—		
H. L. Jolly, Carolina 6, nw c sw, 9-15-18e	250	856
Hale & Raynolds, Sango 1, csl n½ sw nw 9-15-18e	10	753
Babcock Brothers, Barnett 7, c sw nw, 8-15-15e	125	1590
E. B. George, Caesar 2, sw c 33-14-16e	50	1626
Mack Drilling Co., McDaniel 1, sw c nw se, 33-16-15e	*	1325
E. J. Metzger et al, Townlot 1, sw c se, 26-15-18e	*	1115
R. Swift et al, Harris 1, nw c se nw nw, 14-15-18e	*	1020
J. E. Swindler, Rentie 1, cwl sw sw 10-15-18e	*	1157
William LaPierre, Durant 2, se c ne ne, 10-15-18e	*	1656
Kimsey and Simpson, Mackey 1, sw c se se sw, 9-15-18e	*	1145
D L T Co. et al, Mackey 4, ne c nw se sw, 9-15-18e	*	1095
A. T. Kreps et al, Brown 1, ne c sw se, 8-15-18e	*	1080
The Francis Corporation, Manuel 2, ne c se se, 18-15-17e	*	1417
S. E. Kelly, Minter 2, sw c ne, 30-14-18e	*	1601
OKFUSKEE COUNTY—		
Burke-Greis Oil Co., Buck 1, sw c ne, 36-11-9e	¶20	3128
Superior Oil Corp., Palmer 1, nw c se, 23-12-11e	*	3641
OKLAHOMA COUNTY—		
I.T.I.O., Jones 1, nw se sw, 1-11-3w	26,258	6505
Mid-Kansas O.&G., Mollman 3, se nw se, 23-11-3w	3452	6353
I.T.I.O., Speegle 3, se sw sw, 24-11-3w	4710	6563
I.T.I.O., Warden 1, nw c sw, 24-11-3w	5768	6603
Shell Pet. Corp., Petty 3, ne c 30-11-2w	1116	6462
Skelly Oil Co., Hoopes 2, sw nw ne, 31-11-2w	4059	6531
Skelly Oil Co., Hoopes 4, se nw ne, 31-11-2w	9494	6508
OKMULGEE COUNTY—		
J. F. Egan, Fox 1, sw sw ne, 22-16-13e	*	2118
Bryan Pet. Co., Sells 1, ne c sw nw, 10-15-14e	*	1685
OSAGE COUNTY—		
Peters Petroleum Co., 5, csl n½ sw, 32-24-9e	30	1607
Mid Co Oil Corp,, 19, sw ne se, 18-22-10e	300	1899
PAWNEE COUNTY—		
John Byrnes, Edminston 6, ne c sw nw, 30-21-9e	30	1120
Cy Marshall et al, Lucas 7, ne nw sw, 6-20-8e	100	2706
Charles Burton, Byers 4, sw se nw, 36-21-8e	*	1345
Thompson and Black, Mote 2, nw c sw, 14-20-9e	*	2630
PAYNE COUNTY—		
Reiter-Moster Oil Corp. et al, Finnell 1, c ne nw, 8-19-1w	760	4836
Mulberry Oil Co., Ballard 5, sw c, 32-18-4e	115	4242
Mulberry Oil Co., Payne 1, sw nw ne, 5-17-4e	40	4270
PITTSBURG COUNTY—		
Midwestern O.&G., Trekell 1, nw c, 14-7-18e	¶18	2015
PONTOTOC COUNTY—		
Dixie, Haynes 3, nw ne sw, 32-5-5e.	300	2495
Superior Oil Co., Boyd 3, sw ne nw, 32-5-5e	100	2265
B. A. LaSalle, Malloy 1, ne se se, 30-5-5e	*	2732
POTTAWATOMIE COUNTY—		
Magnolia, Walker 1a, ne nw ne, 21-7-4e	35	3515
Empire Oil & Ref., Smith 4, nw se ne, 8-8-5e	200	4022
SEMINOLE COUNTY—		
Mid-Continent Pet. Corp., Ground 1, nw ne ne, 23-9-5e	10	4239
Magnolia, Carbitcher 2, se ne sw, 14-9-5e	145	4185
Gypsy, Carbitcher 1, sw c se, 14-9-5e	50	4241
Independent O.&G. and Atlantic O. Prod., Fixico 4, se sw nw, 20-9-6e	520	4265
Carter Oil Co., Chowning 5, sw c, 19-9-6e	1055	1478
Amerada Pet. Corp., Lasley 1, ne nw sw, 19-9-6e	1380	4135
Magnolia, Cudjo 2, nw ne ne, 24-7-6e	25	4160
Gypsy, Payne 7, sw se ne, 5-7-7e	1510	3219
Champlin O.&R. et al, Sachemeche 6, se sw sw, 9-6-6e	225	2914
Sunray Oil Co., Mathis 1, se c ne, 12-5-7e	¶38	2700
Harris et al, Shupco 1, ne c se, 20-6-6e	*	3130
STEPHENS COUNTY—		
Amerada, Hanson 8, se sw sw, 12-1s-4w	220	3200
Pearce and Brown, Harley 1, nw c, 30-2s-6w	*	5071
Pace et al, Watkins 5, nw c ne nw se 21-2s-7w	*	1776
Pace et al, Bristowe 6, ne c nw nw se, 18-2s-7w	*	1872
WAGONER COUNTY—		
I. V. Horner, Ross 3, se c ne, 29-18-18e	*	741

EASTERN STATES

KENTUCKY

Company, Well and Location	Initial Production Bbls.	Depth
DAVIESS COUNTY—		
Hunt & Crowe, Walker 1	5	....
Leeper Oil Co., Blackerby 3	45	920
The Ohio Oil Co., Brown 1	*	....
HENDERSON COUNTY—		
K. M. Dole Drilling Co., Fryer 2	¶½	....
H. O. Keener & Co., Crowder 1	*	....
Iley Browning, Griffin 1	*	....
Creek Drilling Co., Cooper 1	*	....
Johnson Oil & Refg. Co., Kerr 1	*	....
OHIO COUNTY—		
J. C. Ellis & Co., Hill-Rhodes 2	80	....
Wade 1	¶1¼	....
McKinley 2	*	....
Hupp, Duff & Co., Noel 1	100	....
Dr. Sirman Co., Farmer 25	20	....
Evans 1	*	750
Rhodes & Co., Brooks 1	¶1½	....
Chester Oil Co., Brandon 1	5	....
Fred L. Weir & Co., Norris Hrs. 14	20	....
Rudolph & Kirkpatrick, Greer 14	24	....
S. B. Berry & Co., Coleman 1	7	....
Penn-Indiana Oil Co., Kelley 14	20	....

SOUTHEASTERN OHIO

Company, Well and Location	Initial Production Bbls.	Depth
MONROE COUNTY—		
Kinsey Farm Oil & Gas Co., Kinsey 2	¶¼	1258
Wittmer Oil & Gas Co., Burkholder 1	*	1900
John Craig & Co., Craig 7	*	1410
MORGAN COUNTY—		
Ohio Fuel Gas Co., Embree 2	¶¼	1538
Bowman Oil & Gas Co., Hoffman 4	¶¼	1623
WASHINGTON COUNTY—		
W. P. Rice & Co., Weppler 1	5	....
NOBLE COUNTY—		
F. O. Parks & Co., Trevanger 3	*	1028

(See page 88)

Applying Aluminum Foil, using TecPro Adhesive shown on left

The pipeline as it appeared after being completely foiled

Storage tank with TecPro holding foil in place

Two standard products that have withstood the rigorous tests of the oil and gas industry.

TECPRO

BLACK LINE PIPE COATINGS and TECPRO FOILING ADHESIVES

Not only has the thoroughly waterproof and lasting qualities of TecPro BLACK LINE Pipe Coatings caused them to find increasing favor among the major pipe line companies, but their ease and simplicity of application cuts labor costs and speeds up the work.

TecPro Pipe Coatings offer maximum protection against corrosion in themselves, but there are those who wish to go a step further and wrap the protective coating to prevent "soil stress" and the damage often caused by rocks and clods when back-filling. For this purpose, TecPro Adhesives have made possible an entirely different type of wrapping material, so tough that it can not be torn through considerable rough handling, so smooth that "soil stress" is impossible and so easy to apply that a small crew, without previous experience, can wrap a mile of larger diameter pipe in one day.

This comparatively new type of wrapping material, itself a waterproofing agency, is Metal Foil, of which Aluminum Foil is the most suitable for a large majority of underground conditions.

TecPro Adhesives cement Aluminum Foil so tightly to other surfaces that no weather condition from below zero to extreme summer heat has ever caused it to turn loose, that is why Foiling and TecPro are synonymous. Foiling always suggests TecPro.

Technical Products Incorporated

Dallas, Texas

Alcoa Aluminum Foil checks corrosion . . . lowers evaporation losses

3 of the money-saving ways to use Alcoa Aluminum Foil

1

Alcoa Aluminum Foil used as coating for tank cars. Checks oil evaporation losses—provides a smooth, clean surface that does not collect dirt readily.

2

Alcoa Aluminum Foil reduces tank temperature when used as a coating on gasoline bulk storage tanks. In addition, it protects the steel against corrosion.

3

Alcoa Aluminum Foil used on pipe lines protects against "soil stress." Tests have also shown the foil to be resistant to corrosion by soils.

Being pure aluminum Alcoa Aluminum Foil resists corrosion.

Because of this, it can be profitably used on the under sides of the steel roofs of tanks containing high sulphur content oils. Used to cover the vapor space of tanks—especially working tanks on pipe line systems—the foil coating will fully and quickly repay its cost. Corrosion losses can also be checked by using this foil on the run-down tanks in the refinery, and on flow-tanks.

On tank tops and sides, Alcoa Aluminum Foil lowers evaporation losses because its bright, silvery surface reflects the sun's rays. When a tank or tank car is protected in this way, the inside temperature will remain 10°F to 25°F lower on sunshiny days.

Foiling with Alcoa Aluminum Foil is quite practical from a cost standpoint.

Our engineers will gladly give you full information on the use and application of Alcoa Aluminum Foil. ALUMINUM COMPANY *of* AMERICA; 2419 Oliver Building, PITTSBURGH, PENNSYLVANIA.

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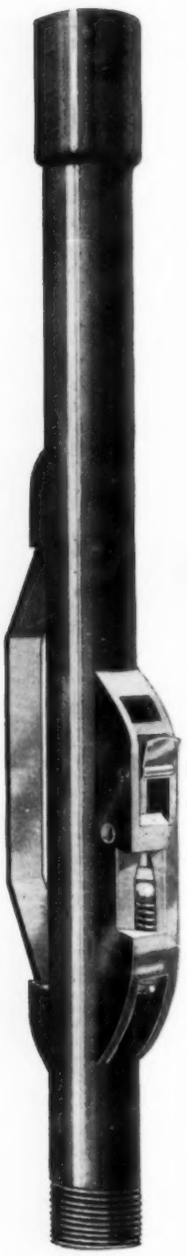

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TIME-TESTED AND FIELD PROVEN

This Bleeder is a part of your tubing and can be placed anywhere on your tubing line.

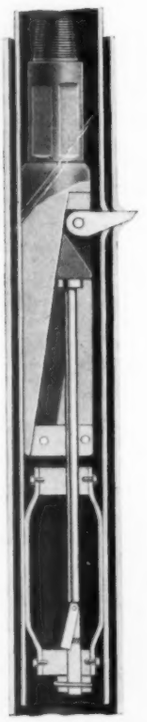
It is positively FOOLPROOF and absolutely dependable. It requires no rotating or weights to be dropped—no extra movement to operate as it is as much a part of the tubing as the tubing itself and will operate with certainty when tubing is started out of the well.

90 Days Unconditional Guarantee.

BRUST DOUBLE STRING PERFORATOR

Perforates single or double thickness of pipe at any desired spot with either cable tools or rotary. A practical, economical and efficient tool that has proven itself successfully in more than 100 wells in the El Dorado district alone.

Rental Basis only in the United States—Sales in Foreign Countries



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TOOL MANUFACTURING CO.

Manufacturers of: BRUST DOUBLE STRING PERFORATOR

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Houston, Texas

BRUST COMBINATION SOCKET
FRIEND TUBING BLEEDER

P. O. Box 1237
El Dorado, Ark.

CENTRAL OHIO

Company, Well and Location	Initial Production Bbls.	Depth
PERRY COUNTY—		
Ohio Fuel Gas Co., Miller 2	¶¾	2870
Moore 1	¶1	3625
Gas Products Co. of Ohio, LaFollette 2	*	3650
McClay & Whitmer, Brown 8	165	3577
ASHLAND COUNTY—		
Ohio Fuel Gas Co., McConnell 1	¶½	....
Smith 2	¶1½	....
Crownshield & Co., Wheeler 5	10	744
Robinson & Co., Culler 4	*	582
MEIGS COUNTY—		
Delbert, Bachelor Co., Arnett 1	*	....
Tyree & Co., Carnahan 15	5	....
Koontz & Co., Beegle 2	*	....
Smith & Watterson, Salzer 1	*	....
HOLMES COUNTY—		
Ohio Fuel Gas Co., Campbell 1	*	....
Kemrow Co., Conn 3	*	3418
Lydic Oil & Gas Co., Mackey 8	*	718
LICKING COUNTY—		
Whitehill Oil Co., Ashcraft 14	*	680
Hope Construction & Refg. Co., O'Bannon 6	95	....
TUSCARAWAS COUNTY—		
Gordon Oil Co., Carroll 1	70	3672
Davis 1	¶1¼	3168
MUSKINGUM COUNTY—		
The Ohio Fuel Gas Co., Varner 1	4	3128
Wehrle Gas Co., Wells 1	*	3319
KNOX COUNTY—		
East Ohio Gas Co., Workham 1	¶1¼	....
Ohio Fuel Gas Co., Meyers 1	¶½	....
GUERNSEY COUNTY—		
East Ohio Gas Co., Quillan 5	15	3407
SUMMITT COUNTY—		
Kime & Co., Shaw Hrs. 1	¶½	3962
VINTON COUNTY—		
I. C. Robinson, Draper 1	¶½	....
HOCKING COUNTY—		
Gordon Oil Co., Stone 11	*	2889
ATHENS COUNTY—		
Coolville Oil & Gas Co., State of Ohio 1	*	1185
FAIRFIELD COUNTY—		
Perry Sturm & Co., Walters 2	*	757

NORTHWESTERN OHIO

SHELBY COUNTY—		
A. B. Ernst & Co., Heilers 2	5	1329
HARDIN COUNTY—		
Kemrow Co., Crawford 1	¶½	1440

WEST VIRGINIA

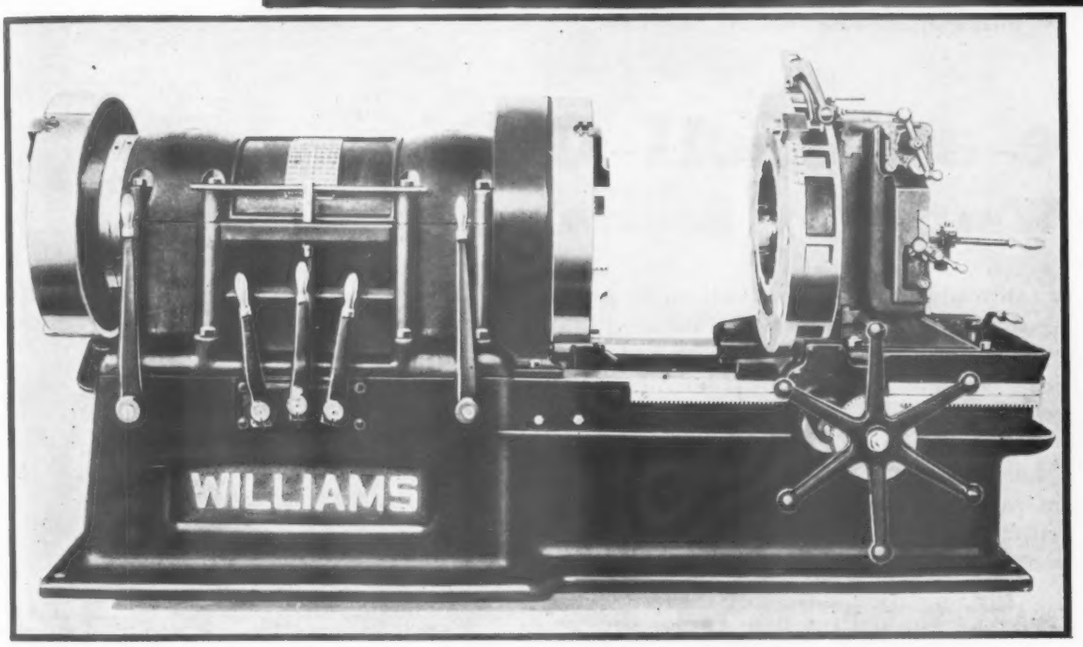
CALHOUN COUNTY—		
C. S. Morris & Co., Nichols Hrs. 1	¶¼	....
Conservation Oil & Gas Co., Kerley 1	¶1¼	....
Richter Oil Co., Haught 4	10	....
MARION COUNTY—		
Sutton Bros., Thomas Hrs. 1	¶2	....
Clifton Oil Co., Campbell Hrs. 1	¶4	....
MARSHALL COUNTY—		
Manufacturers Light & Heat Co., Pyles 3411	¶1¼	....
McCush 3400	¶¼	....
PUTNAM COUNTY—		
Penn Natural Gas Co., McGinnis 1	¶1	....
Chaney 2	.1	....
KANAWA COUNTY—		
United Fuel Gas Co., King Land Co., 4096	*	....
Buffalo Lick Oil & Gas Co., Young 2	.¼	....
ROANE COUNTY—		
United Fuel Gas Co., Deverick 4278	¶1¼	....
Reedy Oil & Gas Co., O'Hara 1	*	....
RITCHIE COUNTY—		
E. D. S. Lynch, Storrs 14	40	....
GILMER COUNTY—		
Hope Natural Gas Co., Gellispie 1	15	....
LINCOLN COUNTY—		
Priedmore & Adkins, Sanson 1	3	....
DODDRIDGE COUNTY—		
Zickafoose & Swadley, Botts 1	2	....
BOONE COUNTY—		
E. R. Cameron, Stone 2	¶1	....
WOOD COUNTY—		
Heck Oil Co., Smith 1	*	....

INDIANA

SPENCER COUNTY—		
Packard Oil Co., Carlton 4	1	....
Carlton 5	18	745
Thomas Seitz & Co., Grass 1	60	....
PERRY COUNTY—		
Roger E. Williams, Backer 1	8	....
Conyers, Roetzel & Co., Delaissee 2	¶½	....
The Ohio Oil Co., James 1	*	....

(See page 90)

25% FASTER, LONGER-LIVED, MORE ECONOMICAL TO OPERATE



and one set of dies threads all sizes of pipe where pitch of thread is the same

THE WILLIAMS RAPIDUCTION THREADER

For fast, economical production threading or cutting-off operations around the oil fields or in the refinery there is no other machine built that will handle as much work as rapidly, accurately and economically as the WILLIAMS Rapiduction.

Among the many features found in no other machine is the famous Rapiduction head that will thread all sizes of pipe within the range of the machine, where the pitch of thread does not change, without changing dies or die-head. This is important because it saves the time and bother of removing head and dies when changing from one size pipe to another.

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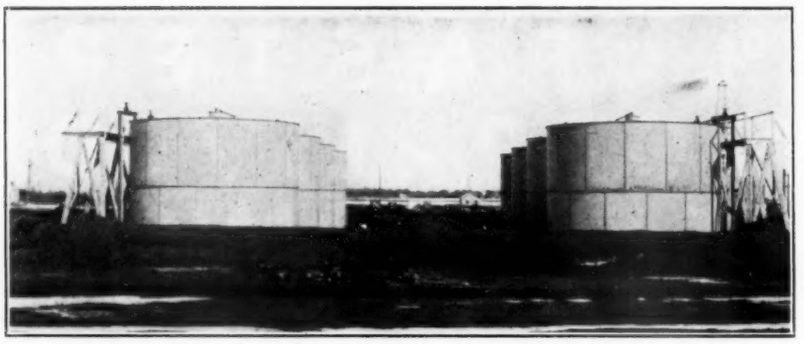

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Now Wasted by Breathing

When suitable measures are not taken to prevent breathing of your lease tanks, the most valuable fractions of the oil escape, the gravity is lowered, the volume reduced, and a considerable part of your income is wasted.

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In MALONEY Vapor-Pressure Tanks the principle of conservation and profit as applied to lease storage has reached its highest development. These tanks enable you to save—and sell—oil which would otherwise be wasted.

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Tulsa, Okla., U. S. A.

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MADE OF KEYSTONE AMERICAN

MALONEY PATENTED BOLTED COPPER-STEEL TANKS

MALONEY
ALONE!

ILLINOIS

Company, Well and Location	Initial Production Bbls.	Depth
CLARK COUNTY—		
Carper, Hardway & Co., Inman 1..	*	451
CRAWFORD COUNTY—		
J. D. Toomey & Co., Highsmith Bros. 15	2	941
WABASH COUNTY—		
J. S. Young & Co., Collison Hrs. 10	*	1478
ST. CLAIR COUNTY—		
Ohio Oil Co., Frye 7	40	701
Hugo & Co., Stein 1	2	547

NEW YORK

ALLEGANY COUNTY—		
L. E. LeSuer, LeSuer 28	4	....
A. C. A. Oil Corp., Fee 5	15	....
Ryder-Richmond Corp., Fee 76	3	....
Fee 77	3	....
Fee 78	3	....
Fee 79	3	....
Fee 80	3	....
Sepany Oil Co., Stewart 3	12	....
Stewart 4	12	....
Perkins & Monroe, Fee 1	6	....
Fee 2	3	....
N. V. V. Franchot, Trus. Meridian 37	8	....
L. A. Wilson & Co., Wilson 8	4	....

PENNSYLVANIA

BRADFORD FIELD—		
South Penn Oil Co., Bingham 377 tr, 2	3	....
Bingham 553 tr. 119	10	....
Bingham 554 tr. 20	7	....
Bingham 400 tr. 1	3	....
Bingham 408 tr. 2	3	....
Burdick 79	3	....
Burdick, 80	4	....
Bingham 1	4	....
Melvin 278	2	....
Melvin 279	2	....
Bing-Satterfield 168	3	....
Rounds 22	5	....
Blair, Davis Co. 8	7	....
Blair, Davis Co. 9	7	....
Blair, Davis Co. 10	7	....
Jones 276	4	....
Jones 277	4	....
Niagara Oil Corp., Fee, (53 oil wells)	106	....
Lawton, (29 oil wells)	58	....
Forest Oil Corp., Fee 1	2	....
Fee 2	2	....
Fee 3	2	....
E. M. Parks, Parks 9	22	....
Parks 10	12	....
O. L. Wann, Bingham 388 tr. 56	5	....
D. W. Daly, Bingham 389 tr. 70	7	....
Minard Run Oil Co., Hamlin 8	4	....
Bell 5	2	....
Tibbets 6	2	....
Wright & Co., Wright 4	7	....
H. & C. Jack, Jack 1	4	....
J. W. Looker, Willetts 1	4	....
BUTLER COUNTY—		
W. M. Ruby & Co., Shaner 21	3	....
Ed. McKinney, McKinney 11	3	....
Reynolds & Co., Gettman 1	¶1	....
Eythe, Weiland & Co., Weiland 2	¶1	....
T. C. Burns, Day 2	*	....
Saxonburg Light & Heat Co., Cunningham 1	*	....
CENTER-MIDDLE FIELD—		
Penn Petroleum Co., Duke 1	7	....
Allegheny Gas Co., Jamieson 1	¶¼	....
GREENE COUNTY—		
J. L. Gerard, Barb 4	*	....
Equitable Gas Co., Stephens 1	*	....
Carnegie Natural Gas Co., Bowers 1	*	....
CLARION-VENANGO COUNTIES—		
G. A. Long & Co., Millis 21	2	....
Millis 22	2	....
S. Y. Ramage, Simcox 69	2	....
F. C. Deemer, Meherton 22	2	....
Meherton 23	2	....
Shaffer Oil Co., Van Camp 4	2	....
Alum Rock Gas Co., Gilbert 1	2	....
Wood & Hess, Deitrick 3	2	....
Deitrick 4	2	....
Ford & Stewart, Stewart 1	*	....
United Fuel Gas Co., Beck 3931	¶¼	....

(See page 92)

ARKANSAS

Company, Well and Location	Initial Production Bbls.	Depth
OUACHITA COUNTY (Smackover)—		
Texas Co., Berry 12, 33-15-15	*	2000
UNION COUNTY (Smackover)—		
Marine Oil Co., Hayes 4, 4-16-15 (second completion)	15	2275
Louisiana O. R. Corp., Hayes 2, 4-16-15	15	1996

LOUISIANA

NORTH LOUISIANA

LA SALLE PARISH (Urania)—		
Arkansas Fuel Oil Co., Urania F-5, 24-10-1e	*	6463
Hope Oil Co., Urania 5, 19-10-2e	20	1560
MOREHOUSE PARISH (Monroe)—		
Louisiana G. & F. Co., Crossett 27, 45-21-5e	¶37	2384
RICHLAND PARISH—		
Palmer Corp., Louise Rhymes 1, 32-17-6e	¶51	2450
UNION PARISH—		
Bahan & Bahan, West 1, 33-23-3e	*	2500

SOUTH LOUISIANA

BAYOU BLUE—		
Standard of La., Schwing 4	*	2088
BAYOU BOUILLON—		
Rycade-Humble, Bayou Bouillon 9-B	*	3886
EAST HACKBERRY—		
Calcasieu Oil Co., Watkins 18	75	2751
EUNICE—		
Elbof Explorations, Valmont Ledoux 1, Sec. 14-6s-2e, St. Landry Parish	*	4362
HACKBERRY—		
Rycade-Humble, Gulf Land 1, wo	*	5087
SOUTH WELSH—		
Pure, A. F. & W. L. Day 1, Sec. 1-10s-5w, Jeff Davis Parish	*	5216

TEXAS

TEXAS GULF COAST

BARBERS HILL—		
Sinclair, Woodward 5	1320	5395
Mills Bennett, Gulf-Higgins 2	600	5245
Sun, McKinney Fee 4	95	5304
BLUE RIDGE—		
Sinclair, Blakely A-4, dd	3	2300
CLAY CREEK—		
Sun, Janner 2	75	1238
ESPERSON—		
Cranfill-Reynolds Co., Davis 3	¶15	2065
PIERCE JUNCTION—		
Navarro Oil Co., Texas Explo. Co.-Dooley 10, dd	400	3800
PILANT LAKE—		
Pure, Jackson Brown et al 1, Wm. Barrett-Abner Harris Sur., Fort Bend County	*	4510
REFUGIO—		
Union Producing Co., O'Brien 3-A	300	5437
Sun Oil Co., Buckley 4	175	3687
SAN FELIPE—		
Empire, J. T. Boyd 1	*	4110
SPINDLE TOP—		
Yount-Lee Oil Co., McFadden 30 dd	240	4400
McFadden 81, dd	15	4400
Sun Oil Co., Price 3, dd	15	5150

SOUTHWEST TEXAS

DARST CREEK—		
Gulf, Dix-McKean 3-A, from chalk fault	27,000	2240
Humble, Sallie Wilson 6	720	2640
Yates Wilson 5	660	2637
La. Oil Ref. Corp., Dix-McKean 3	8500	2301
T. Dix 5	1500	2578
Sun Oil Company, Knoblock 7	2592	2550
Abercrombie et al, Dix-McKean 4 (was 3)	2190	2567
Dix-McKean 7 (was 2)	1800	2573
Empire, Knoblock 2, lost returns in chalk	*	2633
ZAPATA COUNTY—		
O. W. Williams, Cuellar 16-C	24	1534
Cuellar 22	300	1543
CALDWELL COUNTY—		
M. T. Keen et al, McNeal 1	*	2430
R. C. McIntyre, J. G. Townes 1	*	2623
San Antonio Pet. Co., Wachenhagen 1	*	1410
FAYETTE COUNTY—		
Kelly et al, Mirke 1	*	488
Moore et al, Kerr 1	*	2485
KARNES COUNTY—		
Hewitt et al, H. M. Matula 1	*	5660
Hurador Oil Co., W. E. Porter 1	*	4136
LAVACA COUNTY—		
McElreath & Suggett, J. Heinsahn 1	*	4027
MEDINA COUNTY—		
Miller & Perkins, Taylor 1	*	500

EAST TEXAS

PANOLA COUNTY (Bethany)—		
Natural Gas Prod. Co., Roquemore 8, B. C. Jordan Sur.	¶8	4645

TEXAS PANHANDLE

CARSON COUNTY—		
L. W. Timms et al, C. R. Garner 2	¶2½-10	3140
GRAY COUNTY—		
Gulf Prod. Co., Coombs-Worley 2	560	2845
P. A. Worley et al 5	150	2911
Humble O&R Co., Coombs-Worley 2	¶18-3800	2808
Phillips Pet. Co., Coombs-Worley-Foxx 2	1600	2840
Shamrock O&G Co., G. H. Saunders 3	50	2825
Sun Oil Co., Coombs-Worley 1	¶20-2400	2855
HUTCHINSON COUNTY—		
Danciger O&R Co., Moore 4	75	3040
Huey et al, Smith 3	15	2770
WHEELER COUNTY—		
Murchison-Fain-McGaha, Parsons 1	¶48	1749

NORTH TEXAS

ARCHER COUNTY—		
Arkansas Fuel Oil Co., Wilson 2	*	1383
Bridwell Oil Co. & Gulf, Fails 2	100	1366
Carter & Wright, Wilson 1	*	1351
Coombs & Rogers, Bounds 1	*	1135
Golding & Cochran, Kelly 1	*	1551
Luke Hodges et al, Mangold 1	*	1852
M. & V. Oil Co., Kunkel 6	*	1200
Madden & Hunt, L. J. Kunkel 1	*	1203
Oil Investment Co., Fails 1	*	1410
Pandem Oil Corp., Young 11-D	30	1411
CLAY COUNTY—		
E. A. Marts et al, Collie 1	*	1050
COOKE COUNTY—		
Sun Oil Co., Milburn 2	50	1202
MONTAGUE COUNTY—		
Carter & Rycade Oil Corp., Cunningham 12	50	900
WICHITA COUNTY—		
Arkansas Fuel Oil Co., K&K 32-A	5	1209
Geo. W. Cooper et al, Day 1	*	1821
Lambert & L. E. Trout, Overby 1	100	1766
Maer-Staniforth et al, Crudup 5	20	1814
United Producers Co., Hodges 3-B	35	1770
WILBARGER COUNTY—		
Fain-McGaha Oil Corp., Waggoner 26-W	120	2315
Grayback Dev. Co., Waggoner-Smith 1	200	2424
Stidham & Thrasher, Bywaters 1	*	2070
The Texas Co., Waggoner 380	*	1125
Waggoner Ref. Co., Waggoner 11-P	55	2668
YOUNG COUNTY—		
Atlantic Oil Prod. Co. & Christie, Jarnigan 2-B	†	1700
Barron et al, Howard 1	*	965
Christie Bros. et al, Kisinger 3	125	2525
Bridwell Oil Co., Daniel 3	10	915
Bridwell & E. J. Stump, Routon 1	*	920
Pat Fowler et al, Hill 2	*	1038
Tom Hunter Oil Corp., Benson 4-A	110	1084
Bloodworth 1-B	400	1075
McDonald & Campbell, Larimore 1	*	722
Perkins-Cullum & Anderson, Daniel 1	230	1078
Perkins & Cullum, Dunagan 9	225	1078
Dunagan 10	150	1078
Perkins-Cullum-Pace, Sadau 1	140	1076
Riner & Omohundro, Keith 4	15	674
Staley-Wynne & Co., Cooper 1	200	1072
Wooten & Reed, Haygood 1	*	802

CENTRAL WEST TEXAS

BROWN COUNTY—		
Greene Prod. Co., Moore 9	10	1255
Humble O&R Co., Whiteside 1	40	1313
Mitcham et al, Terry 1	*	1656
E. L. Smith Oil Co., George 22	20	1358
Texas Unity Oil Co., Miers 2	*	1209
Venmex Oil Co., Hickman 9-D	100	1318
Woodruff et al, George 3	8	1293
CALLAHAN COUNTY—		
Guffey et al, Finley 1	*	1102
Lewis Prod. Co., Alexander 1	25	1007
F. M. Taylor et al, Biggerstaff 1	*	713
COLEMAN COUNTY—		
Eastland Oil Co., Weaver 1	*	1875
Herbert Oil Co. et al, Weaver 1	1¼	1878
Lloyd Oil Corp., Bartholomew 9	215	1452
Wasserman et al, Godwin 1	10	916
EASTLAND COUNTY—		
Magnolia Pet. Co., Kirk-Erwin 2	*	3847
Rover Drlg. Co., Chastain 1	¶2¼	1643
Southern Oil & Prod. Co. et al, Chesley 1-A	*	3880
Texas Co. & Warner-Quinlan Co., Hitson 2	¶3-700	3420
PALO PINTO COUNTY—		
C. Bennings et al, Hinkson 1	*	1280
Brazos River O&G Co. Fee 2	¶7	1353
Transcontinental Oil Co., Dalton 1	*	3035
SHACKELFORD COUNTY—		
Gilman & McMurray, Herron 1	35	925
Roeser-Pendleton, Inc., Morris-Buie 1, Sec. 191	15	1767
Morrie-Buie 1, Sec. 201	120	1621
G. Schoonmaker et al, Farmer 1	*	1735
STEPHENS COUNTY—		
Bateman & Co., Manning 1	*	4053
Lone Star Gas Co., Ellis 2	¶1½	3759
G. W. Elliott 1	¶4½	2114
T P Coal & Oil Co., Chas. Binney 78	15	1923

WEST TEXAS

CROCKETT COUNTY—		
California Co., Shannon 2	50	2576
ECTOR COUNTY—		
Humble-Penn-Atlantic, Kloh 7-D	105	3780
FISHER COUNTY—		
Cranfill-Reynolds Co., Johnson 1	*	3198
GLASSCOCK COUNTY—		
Shell Pet. Corp., Phillips 1	1000	2347
LOVING COUNTY—		
California Co., J. G. Allen 1	205	4315
PECOS COUNTY—		
M. H. Black & Dittman Drlg. Co., Pecos Valley 2	40	1580
Savoy Oil Co., et al, Smith 4	600	1830
Shell Pet. Corp., Smith 5-D	1400	1883
Smith 7-D	650	1866
WARD COUNTY—		
Shipley Oil Corp., Hayzl tt 4	*	3127

CENTRAL EAST TEXAS

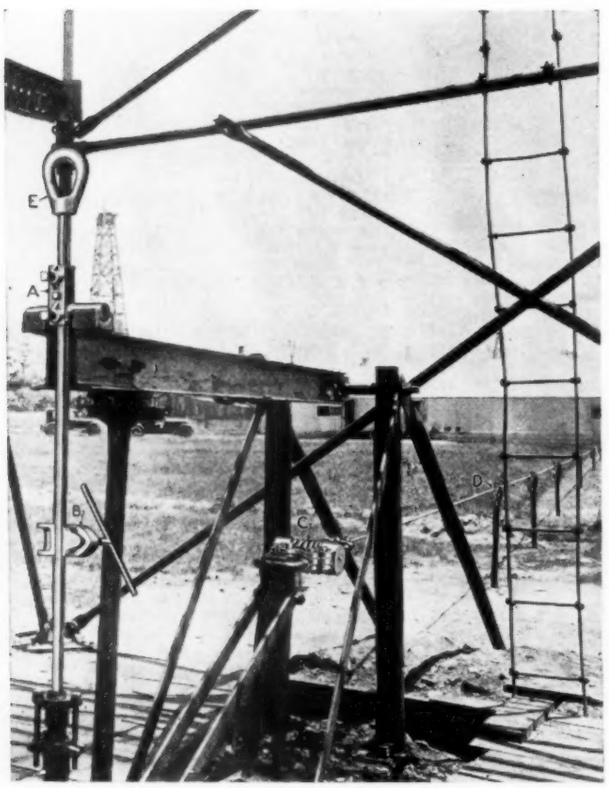
VAN ZANDT COUNTY—		
Pure Oil Co., W. T. Jarman 3	5000	2941
W. T. Jarman 4	2500	2885
J. T. Thompson 3	3000	2887

New Map of Great Falls, Conrad Region, Montana

Billings, Mont.—A new map showing the geologic structure of the Great Falls, Conrad region, covering about 4500 square miles in North-Central Montana, has just been completed by the Geological Survey, Department of the Interior, as one result of field investigations in 1929 in furtherance of its work of classifying public lands with respect to their mineral value. In addition to the structural features, which are depicted by contours on the top of the Madison limestone, the map shows the areal geology, the principal roads, railroads, settlements, etc., in the area, and the location of all wells drilled for oil and gas outside the Pondera and Bannatyne oil fields. It also includes representative stratigraphic sections for the western and eastern parts of the area. The scale of the map is four miles to the inch, and the area specifically covered is Ts. 20 to 30 N., Rs. 1 to 6 E. and 1 to 5 W. Montana meridian, including parts of Toole, Pondera, Liberty, Teton, Chouteau, Cascade, and Lewis and Clark Counties. The field and office studies involved were made jointly by C. E. Dobbin and C. E. Erdmann, geologists.

A few copies of this map are available at the offices of the Geological Survey in Washington, D. C., at 315 Fratt Building, Billings, Montana, and at Shelby, Montana, for distribution to those having particular interest in the area.

A RATIGAN EQUIPPED JACK WELL



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No. 36 Rod Line Roller

View showing Roller Bearing construction.

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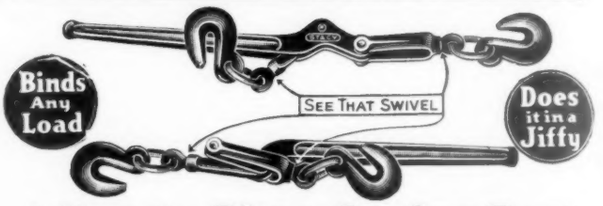

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Just ask your jobber or export agent for Stacy Load Binders in the size you want. He'll do the rest. I also sell chains. Any weight, size or length with hooks or as desired.

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PERMITS GRANTED FOR NEW WELLS

ARKANSAS

CALHOUN COUNTY—Tidal Oil Company, Ark. Trim 1, 150 ft s and 150 ft w ne c se nw, Section 3-16-14.

UNION COUNTY—Stanley B. Hickman, E. G. Hogg 1, 200 ft s and 200 ft w ne c se se, Section 35-16-14. Arkansas Oil & Gas Company, Kirksey (perforate) 1, 165 ft sn and 165 ft w, se c sw se, Section 24-17-16. Arkansas Fuel Oil Company, W. A. Burns 1, 400 ft n and 330 ft e sw c ne nw, Sec 14-18-17.

TEXAS

ARCHER COUNTY—Consolidated Oil Co., Wichita, H. F. Harmel, 100, 5, 2490, TE&L sur, 300 ft s of No. 6; 6, 150 ft from n and e lines. Shell, Dallas, W. R. DuPriest, 105, 3, 2490, TE&L sur, 744 ft from e and 150 ft from s line. L. T. Burns, Wichita Falls, G. Symank, 20, 2, L. M. Meade sur, 150 ft from s and w lines; 3, 450 ft from w and 510 ft from s line. Perkins & Cullum, Wichita Falls, E. R. Boyles, 39, 1, Blk 8, F. C. S. L. sur, 150 ft from s and w lines. E. J. Dunagan, 66, 8, 157, TE&L sur, 450 ft from s and 750 ft from w line. Coombs & Rodgers, Wichita Falls, F. P. Bounds, 116, 1, B 11, BBB&C sur, 150 ft from e and 450 ft from s line. Heydrick-Camp Drilling Co., Wichita Falls, T. B. Wilson, 57, 3, B. Howard sur, 300 ft e of No. 1. Frank Hutcheson, Archer City, S. F. Hutcheson, 30, 1, J. Ostane sur, 600 ft from w and 1500 ft from n line, Blk 142. J. B. Baker, Jr., Wichita Falls, Club Ranch, 228, 1, Harris sur, 1170 ft from n and 150 ft from e line, Blk 21. Kisk Oil Co., Wichita Falls, G. A. Lauster, 40, 2, B 3, BBB&C sur, 150 ft from n and e lines. Geo. L. Pace, Wichita Falls, C. S. Arnold, 320, 1, J. Levins sur, 1685 ft from w and 150 ft from s line. M. & V. Oil Co., & Mitchell & Fulton, Wichita Falls, H. O. Kunkel, 40, 6, G. W. Stell sur, 300 ft n of No. 5. Golding & Cochran, Wichita Falls, R. J. Kelly, 150, 1, J. W. Harris sur, 150 ft from n and e lines of Blk 68. Steele Drilling Co., Wichita Falls, C. E. Goodwin, 50, 1, B 70, J. W. Harris sur, 150 ft from s and w lines. J. H. Massie, Wichita Falls, J. T. Richardson, 80, 11, B 14, S. Anderson sur, 150 ft from n and w lines. Mrs. H. B. Wallace, Wichita Falls, Fee, 160, 56, No. 6, S. P. Ry sur, 332 ft n of No. 40, sw¼. J. H. Massic, Wichita Falls, J. T. Richardson, 80, 10, S. Anderson sur, 300 ft n of No. 9. Luke Hodges, Wichita Falls, Mangold, 40, 1, McKinney-Williams sur, 150 ft from e and 1320 ft from s line, Blk 8. Madden & Hunt, Olney, L. J. Kunkel, 40, 1, L. J. Kunkel sur, 150 ft from s and w lines of Survey. Fain-McGaha Oil Corp., Wichita Falls, G. B. Hamilton, 80, 1, B 5, BBB&C sur, 1200 ft from n and 1000 ft from e line. Bridwell Oil Co., Wichita Falls, R. W. Fails, 30, 3, 2419 TE&L sur, 2506 ft from w and 752 ft from s line Sec; 2, 2866 ft from w and 752 ft from s line Sec. Underwood Drilling Co., et al, Wichita Falls, J. J. Perkins, 40, 2, S 10, Amer. Trib. sur, 800 ft n and 560 ft from w line. J. H. Massie, Wichita Falls, J. T. Richardson, 80, 9, S. Anderson sur, 300 ft n of No. 7. L. T. Burns, Wichita Falls, R. W. Fails, 42, 7, 2519 TE&L sur, 300 ft n of No. 2; 8, 360 ft w of No. 6. L. W. McCrory, 120, 1R, 108, Amer. Trib. sur, 150 ft from e and 1470 ft from n line.

AUSTIN COUNTY—Humble, Houston, R. Thompson, 9, W. C. White sur, 400 ft from w and 200 ft from n line. M. Brown, 1, Wm. Harvey sur, 200 ft from ne and nw lines.

BROWN COUNTY—A. A. Elms, Brownwood, S. M. Parks, 145, 3, S. S. Tom sur, 1000 ft from n and 320 ft from w line. Greene Prod. Co., Fort Worth, M. A. Davis, 40, 8, S 4, SA&MG sur, 480 ft from e and 550 ft from n line. M. E. Bishop, Brownwood, B. S. Boysen, 20, 1, 604, P. Mangle sur, 1350 ft from s and 150 ft from e line. Syndicated Oil Corp., Amarillo, T. Hutton, 80, 2, J. A. Nobles sur, 750 ft from n and 200 ft from e line. Tex. Cal. Oil Co., Brownwood, J. C. Martin, 32, B4, S 11, HT&B sur, 150 ft from n and 450 ft from e line.

BASTROP COUNTY — Majestic Pet. Co., Dallas, J. R. Breeding, 200, 1, M. Andrews sur, 160 ft from n and 1020 ft from w line.

Tabulation and Comparison on Page 44

BAYLOR COUNTY — Perkins & Cullum, Wichita Falls, W. B. Mills, 40, 1, 2413 TE&L sur, 816 ft from w and 150 ft from s line. Consolidated & Petroleum Prod. Co., Wichita Falls, W. H. Portwood, 80, 17, 1281 TE&L sur, 30 ft n of No. 16.

BEXAR COUNTY—Eckert & Son, San Antonio, L. Sandemer, 110, 5, No. 52, 400 ft w of No. 4.

BEE COUNTY—Rio Bravo, Houston, SA&AP, 1, A. Smalley sur, center.; 2, G. A. Kerr, sur, center; 3, G. A. Kerr sur, 395 ft s of Pettus townsite.

BOWIE COUNTY—L. J. Timberlake, New Boston, J. M. Tidwell, 354, 1, J. Eskell sur, 300 ft from e and 2800 ft from s line Sur.

CALLAHAN COUNTY—Humble, Cisco, M. Alexander, 80, 2, S 23, E. T. Ry sur, 2743 ft from n and 1170 ft from e line Sec. M. R. Surles, 1, 3157, TE&L sur, 940 ft from n and 1260 ft from w line. Arcadia Refg. Co., Brownwood, A. S. Lobban, 160, 39, 2995 TE&L sur, 150 ft from n and 320 ft from e line. J. A. Berman et al, Cisco, W. A. Hinds, 80, 1, S 13, B 12, E. T. Ry sur, 200 ft from n and e lines of Sec. Moutray Oil Co., Abilene, J. A. Flores, 40, 22, S 149, BBB&C sur, 75 ft from s and 660 ft from e line. E. W. Schaffner, Cross Plains, H. James, 90, 1, No. 777 W. G. Anderson sur, 150 ft e of center of w line.

CARSON COUNTY—Prairie, Ranger, J. L. Noel, 3, S 198, B 3, I&GN sur, 330 ft from s and e line ne se. Cities Service, Pampa, Burnett, 25, S 100, B 5, I&GN sur, center of sw. Burnett, 24, S 42, B 5, I&GN sur, 1320 ft from n and 2640 ft from e line Sec. Gulf, Fort Worth, B. F. Block, 160, 2, S 111, B 4, I&GN sur, 330 ft from s and e lines nw. Gibson Oil Corp., Amarillo, E. J. Moore, 120, 1, S 20, B 7, I&GN sur, 330 ft from s and e lines ne se.

CLAY COUNTY — Merrick & Goldsmith, Wichita Falls, Byers, 80, 4, B 15, Byers sur, 300 ft w of No. 2.

CHAMBERS COUNTY—Yount-Lee, Beaumont, Chambers County Agricultural Co., 14, Wm. Bloodgood sur, 437 ft from n and 1115 ft from w line. Woodward, 7, Wm. Bloodgood sur, 1536 ft from n and 1560 ft from w line.

COLEMAN COUNTY—Agnew & Sons Inc., Coleman, W. E. Switzer, 115, 3, B 8, No. 279, Wm. Farris sur, 600 ft nw of No. 2.

DUVAL COUNTY—Magnolia, Dallas, C. W. Hahl, 8, S 61, J. Poitevent sur, 440 ft w of No. 6, 9n 10 ft strip.

EASTLAND COUNTY—Lone Star Gas Co., Dallas, W. H. Groove, 200, 6, S 487, S. P. Ry sur, 330 ft from n and w lines of Sec. Texas Development Co., Eastland, Lewis, 80, 1, S 43, B 4, H&TC sur, 200 ft from s and e lines. Hoffman & Page Co., Eastland, O. E. Lyerla, 80, 6, S 27, B 2, H&TC sur, 342 ft n of No. 5.

ECTOR COUNTY — Cosden Oil Co., Fort Worth, University, 80, A2, S 1, Blk 35, 316 ft from n and 438 ft from e line s½ ne.

EL PASO COUNTY — Layne-Texas Co., Houston, W. D. Malone, 1100, 2, No. 47, J. M. Day sur, 1300 ft from nw and 1500 ft from sw line.

FORD BEND COUNTY—Gulf, Houston, L. W. Luscher, 490, 18, T. Hobermaker sur, 600 ft from n and e lines. Cullen & West, Houston, Brown, 1, Barrett-Abner sur, 1481 ft from n and 1900 ft from w line.

FISHER COUNTY—The Texas Co., Houston, M. Teagarden, 106, 1A, S 8, B R, W. E. Richardson sur, 50 ft s of No. 1. M. Teagadden, 200, 1B, S 8, 440 ft from e and 4486 ft from s line of Sec.

GRAY COUNTY — Phillips, Bartlesville, J. E. Wood, 80, 4, S 13, B 3, I&GN sur, 313 ft from e and 375 ft from s line n½ sw. H. F. Wilcox Oil & Gas Co., Tulsa, Combs, 160, 15, S 35, B 3, I&GN sur, 330 ft from s and w lines of nw. Cities Service, Pampa, Wall, 2, S 161, B 3, I&GN sur, center of se. Lefers Pet. Co., Lefors, Z. J. T. Wilson, 480, 1, S 1, BS&F sur, 330 ft from n and e lines of Sec. The Texas Co., Wichita Falls, A. Chapman, A, 8, S 50, B 25, H&GN sur, 200 ft from e and 855 ft from n line. J. B. Bowers, 160, 15, S 89, B B2, H&GN sur, 990 ft from s and w lines of Sec.

GALVESTON COUNTY — Marrs McLean, Beaumont, Cade, 480, 17, B 24, N. Fitzsimmons sur, 160 ft sw of No. 12.

GLASSCOCK COUNTY — Kirby Pet. Co., Houston, J. W. Baker, 80, 6, S 23, B 33, T&P sur, 990 ft from w and 2310 ft from n line Sec.

GRAYSON COUNTY—Harold Bucker, Oklahoma City, F. G. Coleman, 37, 1, S 1311, W. Wright sur, 150 ft from s and w lines.

GARZA COUNTY—M. L. Richards, Wichita Falls, K. Stoker, 1, S 2, B 2, GH&H sur, 330 ft from n and w lines of Sec.

GOLIAD COUNTY—A. G. Riemenschneider, Goliad, A. T. Fromme, 300, 1, P. Dexter sur, 275 ft from n and 912 ft from w line.

HOOD COUNTY — Hood Oil & Gas Co., Fort Worth, W. Babney, 100, 1, B 30, M.C.-S.L. sur, 300 ft from e and 600 ft from s line.

HOWARD COUNTY—F. H. E. Oil Co., & Kimbell, Sherman, D. B. Cox, 200, 1, S 8, B 33, T&P sur, 330 ft from s and e lines of sw.

IRION COUNTY—Fox & Thornton, Mertzon, F. Tankersley, 40, 3, No. 712, 450 ft from e and 200 ft from s line ne se.

JONES COUNTY—Gibson & Johnson, Abilene, J. M. Holder, 50, 1, No. 219, E. Miles sur, 1125 ft from n and 483 ft from e line, Blk 22.

JACK COUNTY—Rathke Oil Co., Wichita Falls, G. M. Kinder, 80, 1, J. F. Torrey sur, 1143 ft from s and 330 ft from e line of Sur.

JEFFERSON COUNTY—Yount-Lee, Beaumont, McFadden, 135, P. Humphryes sur, 1610 ft from w and 2135 ft from n line.

LIBERTY COUNTY—Cranfill & Reynolds, Houston, N. Esperson, 660, 11, C. W. Fisher sur, 420 ft w of No. 10. The Texas Co., Houston, O. Green, 30, 7, M. G. White sur, 250 ft n and 250 ft w of No. 5. Gulf, Houston, E. W. Boyt, 618, 6, A. Allen sur, 2598 ft from e and 2502 ft from s line.

LIVE OAK COUNTY — Houston Oil Co., Houston, Cartwright, 22, J. M. Colchado sur, 500 ft e of No. 18.

MILAM COUNTY—Moody, Guthrie, Birdwell & Stork, Rockdale, A. Stork, 100, 1, S. C. Robertson sur, 1200 ft from n and 450 ft from e line.

MEDINA COUNTY — Sun, Dallas, Wm. Edgar, 335, 1, No. 362, Jos. Barrell sur, 650 ft from e and 150 ft from s line.

MONTAGUE COUNTY — Petroleum Prod. Co., Wichita Falls, M. F. York, 78, 1, F. Robertson sur, 1404 ft from e and 1362 ft from s line.

MITCHELL COUNTY—Gant & Teas, Colorado, H. Andley, 160, 1, S 12, B 28, T&P sur, 330 ft from e and 2510 ft from s line se¼.

MENARD COUNTY—C. G. Cromwell et al, San Angelo, G. P. Eckhardt, 320, 2, S 10, B 2, T&NO sur, 600 ft of No. 1.

PECOS COUNTY—C. S. Messinger, Royalty, Turmes, 120, 1, S 54, B 10, H&GN sur, 150 ft from nw and sw line of e. Cardinal Oil Co., San Angelo, J. H. Tippett, 160, 4, S 40, GC&SF sur, 1050 ft from s and 548 ft from w line.

PALO PINTO COUNTY—J. H. Richardson, Graford, A. Storm, 177, 1, Y. Geminez sur, 1100 ft from e and 750 ft from s line Sur.

PANOLA COUNTY — Arkansas-Louisiana Pipe Line Co., Shreveport, L. Werner, 15, 12, E. F. Mitcheson sur, 132 ft from w and 1102 ft from s line.

POTTER COUNTY—Texas Interstate Pipe Line Co., Amarillo, F. F. Waymouth, 320, 1, S 37, B B10, EL&R sur, center of Sec.

REFUGIO COUNTY—Independent Oil & Gas Co., Tulsa, C. Heard, 73, 1, Refugio sur, 174 ft from nw and ne lines. J. F. Heard, C. 2, Refugia sur, 250 ft from n and 175 ft from w line. Luling Oil & Gas Co., San Antonio, J. W. Ray, 2½, 1, Refugio sur, center of Blk. 79. Houston Oil Co., Houston, J. M. O'Brien, 1, Refugio sur, 109 ft from s and e lines of Lot 3, Blk 5.

REAGAN COUNTY — Big Lake Oil Co., Texon, University, 640, 5C, S 25, B 9, 250 ft

from w and 625 ft from s line Sec. Westyde Inv. Co., Fort Worth, J. R. Scott, 160, 1, S 177, B 1, T&P sur, center of nw¼.

REEVES COUNTY — California Co., Colorado, H. J. Abrams, 640, 1, S 13, B 54, T4S, T&P sur, 1650 ft from s and e lines.

SHACKLEFORD COUNTY—Oyler & Morris, Moran, Broyles, 60, 5, S 16, L. A. L. sur, 300 ft e of No. 4. Dickey Oil Co., Cisco, E. Webb, 320, 2, 576, TE&L sur, 1800 ft from nw and 870 ft from ne line Sec. McMeans & Bridwell Oil Co., Wichita Falls, Albany Nat'l Bk., 160, 3, 1632, TE&L sur, 750 ft from n and 2216 ft from w line s½. J. S. Dennis, Moran, Dennis, 208, 5, S 15, L. A. L. sur, 108 ft from w and 600 ft from s line.

STEPHENS COUNTY—Hickok Prod. Co., Paschall, 9, 1, S 9, L. A. L. sur, center. P. B. Goodwin, Breckenridge, W. C. Goodwin, 80, 1, S 21, B 8, T&P sur, 400 ft from w and 200 ft from s line n½ ne¼.

THROCKMORTON COUNTY—C. C. Williams, Jean, J. M. Hefley, 40, 1, 2233, TE&L sur, 1255 ft from w and 150 ft from s line Sec. Webb & Gaskill, Woodson, G. Eaton, 20, 1, 689, TE&L sur, 744 ft from n and 121 ft from e line; 2, center. M. M. Dabney, Breckenridge, J. E. Titus, 80, 1, 996, TE&L sur, 150 ft from s and w lines of ne.

VAN ZANDT COUNTY—Pure, Fort Worth, A. D. Clark, 24, 2, Jno. Walling sur, 175 ft from w and 75 ft from n line. W. F. Swain, 33, 1, Jno. Walling, 250 ft from n and 200 ft from w line. A. R. Tunnell, 101, 2, Jno. Wallin sur, 125 ft from e and 213 ft from s line. A. G. Mayfield, 107, 1, Nacadoches CSL sur, 250 ft from e and 662 ft from s line. Pure & Sun, Dallas, Thompson, 26, 2, Jno. Walling sur, 250 ft from n and 200 ft from w line. Shell & Pure, Fort Worth, E. L. Fowler, 32, 4, Jno. Walling sur, 122 ft from w and 250 ft from n line. Pure et al, Fort Worth, P. H. Tunnell, 13, 1, M. Gross sur, 72 ft from w and 92 ft from s line.

WICHITA COUNTY—Comac Drilling Co., Wichita Falls, R. A. Neal, 20, 1, J. M. Sharp sur, 450 ft from e and 150 ft from s line. Arkansas Fuel Oil Co., Wichita Falls, Kemp & Kempner, A, 60, 33, B 22, WVFL sur, 500 ft from e and 170 ft from s line. Mid-Continent Holding Corp., Wichita Falls, N. R. Temple, 91, 7, B 8, P. P. C. S. L. sur, 756 ft from n and 442 ft from w line. C. R. Sheldon, Electra, J. W. Swanson, 200, 1, B. F. Blount sur, 450 ft no of center of se line. Humble, Wichita Falls, Wichita-Taylor, 110, 25, B 81, W. V. F.-L. Staley-Wynne & Co., Wichita Falls, R. A. Neal, 16, 1, J. M. Sharp sur, 150 ft from s and e lines.

WILBARGER COUNTY — Staley-Wynne & Co., Wichita Falls, W. T. Waggoner, 80, B9, S 25, B 4, H&TC sur, 410 ft n of No. 8. W. T. Waggoner, B 80, 9, S 25, B 4, H&TC sur, same as above. Fain-McGaha Oil Corp., Wichita Falls, W. T. Waggoner, W, 100, 27, S 32, B 4, H&TC sur, 1010 ft from n and 1380 ft from w line. Grayback Dev. Corp., Wichita Falls, W. T. Waggoner, 60, 4, S 49, B 2, H&TC sur, 50 ft e of No. 1 in se.

WILLIAMSON COUNTY—W. D. Anderson, Fort Worth, M. V. Lawrence, 20, 2, S. Miller sur, 150 ft from n and w lines. A. M. Wilbern, Taylor, A. Rosenberg, 164, 1, S. Pharras sur, 60Vs from n and 500Vs from w line. E. E. Ertel, Taylor J. C. Abbott, 73, 3, S. Miller sur, 150 ft from n and w lines; 2, 150 ft from n and 420 ft from e line; 4, 450 ft from e and 150 ft from s line. J. C. Stribling, Taylor Simmons, 5½, 1, H. Owen, 170 ft from w and 160 ft from s line. Albrecht & Stribling, Llano, P. Streich, 60, 1, H. Owen sur, 200 ft from ne and 150 ft from nw line. E. L. Chapman, Fort Worth, G. W. Lawrence, 3, 1, S. Miller sur, 85 ft from n and 200 ft from e line. Nash, Windfohr & Perry, Austin, J. Abbott, 10, 1, Hines sur, 150 ft from n and w lines.

WASHINGTON COUNTY—Mid-Kansas Oil & Gas Co., Tulsa, Jannke, 629, 1, A. Miller sur, 675 ft from n and 1575 ft from e line.

WALLER COUNTY—Humble, Houston, R. Hardy, B, 2, No. 2, J. E. Groce sur, 800 ft e and 2100 ft n of No. 1.

WHEELER COUNTY — Fain-McGaha Oil Corp., Wichita Falls, I. Close, 13, S 82, B 23, H&GN sur, 660 ft from n and w lines of Sec.

WHARTON COUNTY—Geo. Hyde, Houston, W. J. Woytek, 20, 6, S. F. Austin sur, 25 ft from e and 545 ft from s line.

YOUNG COUNTY — Staley-Wynne & Co., Wichita Falls, E. Bearden et al, 1, B 7, Bloodworth No. 2 sur., 10 ft from n and e lines of Lot 9. R. E. Moore et al, Fort Worth, B. F. Barrett, 22, 1, E. W. Sargent sur, 450 ft from e and 150 ft from s line; 2, 300 ft w of No. 1. Panhandle Ref. Co., Wichita Falls, J. D. Lowe, 40, 2, 250, TE&L sur, 755 ft from n and 450 ft from w line. Hunter Oil Corp., Wichita Falls, J. M. Bloodworth, A, 35, 1, 157, TE&L sur, 150 ft from s and e lines. Perkins & Cullum, Wichita Falls, E. J. Dunagan, 66, 9, 157, TE&L sur, 750 ft from s and 450 ft from w line; 10, 450 ft from s and 1050 ft from w line. B. C. Gilmore et al, Markley, G. P. Stewart, 40, 1, Y. C. S. L. sur, 450 ft from n and w lines of Blk. 7. D. L. Wolf, Olney, E. Hill, 22, 6, 59, TE&L sur, 311 ft s of No. 1. Christie Bros., Wichita Falls, M. R. Jarnagan, B, 50, 3, W. G. Orrick sur, 400 ft ne of No. 2. Bridwell & Stump, Wichita Falls, T. J. Routon, 120, 1, 181, TE&L sur, 1250 ft from s and 150 ft from w line Sec. Jas. F. McKanna, Wichita Falls, J. Ware, 3, 1, J. W. Manning. W. H. Junker, Olney, Boley, 20, 2, S 194, TE&L sur, 15 ft from n and 650 ft from w line Sec. Richardson Trust Co. & Dresser, Markley, F. M. Cullers, 80, 6, B 19, T. C. S. L. sur, 450 ft e of No. 2. Flowers & Barclay, Wichita Falls, B. Swetlek, 80, 1, 1590, TE&L sur, 150 ft from s and e lines of ne. Staley, Wynne & Co., Wichita Falls, A. C. Rodgers, 40, 1, No. 232 sur, 150 ft from s and e lines. C. J. Kleiner, Cisco, Remington, 40, 1, 2248, TE&L sur, 1016 ft from w and 1716 ft from s line Sec. H. B. Alexander, Loving, J. B. Foster, 8, 2, No. 284 sur, 750 ft from s and e lines. Lindsay Drilling Co., Graham, A. Heatherly, 15, 1, 1461, TE&L sur, 150 ft e and 438 ft from s line Sec. J. L. Groves, 40, 1, 1445, TE&L sur, 150 ft from n and e lines. R. D. Garrett, Graham, D. C. Ward, 40, 1, 260, TE&L sur, 150 ft from n and w lines. W. W. Barron, Sweetwater, R. C. Howard, 160, 1, 243, TE&L sur, 150 ft from w and 1050 ft from s line Sec. G. B. Chandler et al, Olney, Hern, 40, 1, 355, TE&L sur, 450 ft from n and 150 ft from e line Sec. C. J. Kleiner, Cisco, A. E. Logan, 160, 1, 2251, TE&L sur, 783 ft from n and 1725 ft from w line n½. Christie Bros., Wichita Falls, M. R. Jarnagan, 50, 2, W. G. Orrick, sur, 40 ft se of No. 1. Bridgeport Machine Co., Wichita Kansas, J. W. Knox, 560, 1, W. C. Ry sur, 150 ft from n and 750 ft from w line Sec. Western Prod. Co., Wichita Falls, G. B. Hamilton, 50, 1, 3401, TE&L sur, 1140 ft from n and 150 ft from e line. E. R. Riggs, Graham, B. P. Larimore, 40, 3, 2247, TE&L sur, 150 ft from s and w lines of Sec. B. E. Moncrief, Fort Worth, C. R. I. & G., 1, J. W. Manning sur, 770 ft ne of center of sw line. G. B. Hamilton, Olney, C. M. Roach, 1, Bloodworth Add, 167 ft from n and 127 ft from w line, Blk 5. McLester Oil Co., Eastland, W. C. Burns, 9, 2, P. Pier sur, 200 ft s of No. 1.

ZAVALLA COUNTY — Anglin Oil & Gas Co., Crystal City, I. T. Pryor, 640, 3, S 3, A. Igurria sur, nw corner.

ZAPATA COUNTY—Trinity Drillers, Inc., San Antonio, I. Garcia, 40, 1, No. 66 sur, 150 ft from n and 450 ft from w line, Blk 8. O. W. Killam, Laredo, R. B. Cuellar, 400, 22, J. M. Pereda sur, 4764 ft from n and 150 ft from e line Sur. W. O. Daniels, Laredo, C. Redondo, 375, 1, Blk. E, Redondo sur, 1000 ft from nw and 1350 ft from sw line.

ARCHER COUNTY — Oil Investment Co., Wichita Falls, Fee, 126, 12, B 6, J. Richards sur, 300 ft sw of No. 11. T. F. Hunter, Wichita Falls, H. L. Morrison, 80, 1, B 16, Crawford, Barclay & Flowers, Wichita Falls, M. E. Rogers, 160, 1, 1596, TE&L sur, sw corner. Swetlek, 80, 1, 1590, TE&L sur, 150 ft from s and e line ne. Oil Investment Co., Wichita Falls, Parrish, 20, 2, S 2, S. P. Ry sur, 300 ft w of No. 1. Worth Oil Co., Wichita Falls, L. F. Wilson, 40, 7, B 29, Ameri. Trib., Lot 16. G. R. Ridgeway, Wichita Falls, D. W. Jackson, 160, 1, J. T. Ellard, Harry Hines, Wichita Falls, B. H. Wallace, 14, 1, S 2, B 3, DCSL sur, 995 ft from e and 150 ft from s line. Empire Gas & Fuel Co., Wichita Falls, L. F. Wilson, 80, 16C, B 29, Amer. Trib. sur, 150 ft from e and 490 ft from n line, Lot 11. Humble, Wichita Falls, G. B. Hamilton, 544, 19, I. Holman sur, sw corner. E. J. Stump, Wichita Falls, J. H. White, 40, 1, B 40, Amer. Trib. sur, 560 ft from e and 450 ft from s line. Underwood Drilling Co., Wichita Falls, H. L. Ward, 320, 1, 1812, TE&L sur, 650 ft from n and 450 ft from e line sw¼. Golding & Cochran, Wichita Falls, M. Phillip, 50, 2, B 6, BBB&C sur, 150 ft from n and e lines. Van Deventer & Alexander, Vernon, J. H. White, 40, 1, B 43, Amer. Trib. sur, 225 ft from n and 450 ft from w line, Lot 11. Barnsdall, Tulsa, T. B. Wilson, A, 200, 14, B. Howard sur, 1144 ft from e and 1521 ft from s line.

ANDERSON COUNTY—Sun, Dallas, Bowers-Maier, 905, 1, E. G. Meyers sur, 300 ft n of No. 2.

BROWN COUNTY — Arcadia Refg. Co., Brownwood, G. H. Reaves, 32, 1, No. 632, J. A. Wright sur, 1556 ft from w and 150 ft from n line. F. P. Hynes et al, San Antonio, W. B. Strickland, 152, 1, S 35, CCSL.

BAYLOR COUNTY — Gilbert & Tidwell, Wichita Falls, F. Gatzki, 30, 1, 2477, TE&L. Perkins & Cullum, Wichita Falls, W. H. Portwood, 40, 1, 1575, TE&L sur, 150 ft from n and w lines e½ ne.

CALLAHAN COUNTY — Westheimer & Daube, Ardmore, L. M. Williams, 100, 3, S 60, Bayland Asy. sur, 20 ft from w and 900 ft from s line. J. F. Mason, Cisco, N. A. Morgan, 43, 1, S 125, Univ. Lands, north central part of lease. Lee McGrew et al, Cisco, A. L. Huntington, 320, 2, 3198, TE&L sur, sw cor of Sec. Prairie Oil & Gas Co., Ranger, W. J. Biggerstaff, 1, 3154, TE&L sur, 150 ft from e and 1500 ft from s line. Mid-Tex. Oil & Gas Co., Abilene, T. Windham, 80, 1, S 371, G. W. Denton. C. L. McCleary, Baird, A. Hickman, 40, 2, S 1, B 145, No. 148, 150 ft from s and e lines.

CHAMBERS COUNTY—Humphreys Corp., Houston, D. N. Scott, 50, 1, H. Griffith. Pure, Fort Worth, Lost Lake, 796, 4, No. 11681.

COLEMAN COUNTY—Vacuum, Houston, L. Weaver, 40, 9, S 9, Gabel. G. A. Beavans, Fort Worth, L. Vaughn, 16, 3, B&S sur, sw corner.

CALDWELL COUNTY—Trinity Drillers, Inc., San Antonio, G. McMullen, 50, 1, G. Petty sur, 150 ft from nw and 795 ft from ne line.

COOKE COUNTY—Rathke Oil Co., Wichita Falls, J. O. Aldridge, 36, 1, R. Eskey sur, 150 ft from n an dw lines.

CRANE COUNTY Tidal Oil Co., Fort Worth, University, I, 160, 8, S 48, B 30, 3330 ft from w and 200 ft from s line.

CALIFORNIA

HUNTINGTON BEACH — West American Oil Co.'s Golden Dome Ward 1, 2-6-11.

INGLEWOOD—Standard Oil Co.'s Vickers 1-24, 17-2-14.

FRESNO COUNTY — Richfield Oil Co.'s Schrock 1, 33-22-16.

KERN COUNTY—Shell Oil Co.'s Lee 1-1, 23-28-26.

LONG BEACH—Cumming Pet. Ltd.'s Kittle 1, 13-4-13.

MT. POSO—Pacific Western Oil Co.'s King 7, 22-27-28.

POTRERO—George F. Getty's P-2 28-2-14.

ROSECRANS—McHahon & McDonald No. 1, 12-3-14.

SANTA BARBARA COUNTY — Valemont Oil Co.'s Birdie Cline 1, 28-4-27.

SUNSET—Barnsdall Oil Co.'s Hazelton 4, 17-11-23.

VENTURA—Associated Oil Co.'s Lloyd 96, 26-3-23; Lloyd 40, 26-3-23. Shell Oil Co.'s Taylor 61, 20-3-23.

OKLAHOMA

CADDO COUNTY—English Dr. Co.'s Perry 1, sw c se sw ne, 31-6-9w; Simms Petroleum Co et al 1, c se nw, 24-6-11w.

COTTON COUNTY—Jacobs and Arington's McCloud 1, ne c sw, 14-2s-11w.

CREEK COUNTY—Phillips and Gled Oil Co.'s Koch 7, sw c ne, 20-19-9e and Carter 1, nw c se, 20-19-9e; Johnson O&R et al's Tiger 1, se c nw, 20-19-9e; Bert Swift et al's Primer 1a, nw c se, 4-19-9e; Ed Jilson et al's Self 1, se c nw, 31-17-10e; Atlantic's Bear 1, se ne nw, 16-14-10e (owdd).

KIOWA COUNTY—W. C. Adams' Fisher 1, ne c sw, 34-7-17w.

LINCOLN COUNTY—Thurman, Deaner et al's Stufflebeam 1, ne c sw, 28-17-2e; Atlantic's Ryan 1, se c nw, 5-14-6e; T. B. Slick Oil Co.'s Crof 1, nw c se, 13-14-3e.

MARSHALL COUNTY—Goddard Oil Co.'s McComas 5, se c sw sw sw, 13-5s-5e; Magnolia Pet. Co.'s West Rutland, se c nw se se, 30-5s-6e.

MUSKOGEE COUNTY — Western Dr. and

Electric Co.'s Fields 3, nw c ne ne sw, 9-15-[illegible]e; Bement Oil Co.'s London 2, nw c 20-13-[illegible]e; J. R. Graves et al's Flowers 6, cwl se nw, [illegible]13-16e.

OKFUSKEE COUNTY — Transcontinental's Tiger 1, se ne ne, 26-10-10e.

OKLAHOMA COUNTY—Mid Kansas O&G's Messer 1, sw c, 32-14-3w; I.T.I.O.'s Precure 1, [illegible] se se, 11-11-3w; I.T.I.O.'s Corff 2, sw se [illegible], 11-11-3w; I.T.I.O.'s Trosper 4, nw ne, 14-[illegible]1-3w; I.T.I.O.'s Trosper 5, se nw ne, 14-11-[illegible]3w; I.T.I.O.'s Trosper 3, sw nw ne, 14-11-3w; I.T.I.O.'s Unsell 3, sw nw ne, 23-11-3w; I.T.I.O.'s Peterson 5, nw ne sw, 25-11-3w; I.T.I.O.'s Peterson 6, nw se sw, 25-11-3w; I.T.I.O.'s Peterson 7, sw se sw, 25-11-3w; I.T.I.O.'s Johnson 7, ne se nw, 25-11-3w; I.T.I.O.'s Johnson 8, sw se nw, 25-11-3w; I.T.I.O.'s Precure 1, sw se se, 11-11-3w; I.T.I.O.'s Mt. Bernon Heights 1, ne c, 15-11-3w; I.T.I.O.'s Williams 1, nw c se ne nw, 23-11-3w; Slick and Atkinson's Alexander 1, se ne sw 2-11-3w; Century Petroleum Co.'s Jefferson 1, sw ne ne, 2-11-3w.

OKMULGEE COUNTY—J. L. Selby's Anderson 34, nw ne nw, 35-14-14e.

OSAGE COUNTY—Empire Gas & Fuel Co.'s 2, sw nw sw, 23-27-11e; Peters et al 6, cwl e½ nw, 27-27-11e; Peters 13, nw ne nw, 17-27-6e; Peter Adamson Jr. 3, nw c, 5-21-9e; Lewis Production Co. 1, se c nw, 34-20-10e.

PAWNEE COUNTY — Geraldine Oil Co.'s Edminston 6, csl nw sw, 30-21-9e; John Burnes's Edminston 7, nw c se nw, 30-21-9e; Martin et al's Cotton 7, cwl ne sw, 6-20-8e; P. J. Breslyn's Cotton 2, nw c sw nw ne, 6-20-8e.

PAYNE COUNTY — Mulberry Oil Co.'s Sharrum 3, ne nw nw, 5-17-4e (owdd) Minnehoma Oil Co.'s Shadd 1, ne se ne, 7-19-1w.

PONTOTOC COUNTY — Dixie Oil Co.'s Roper 2, sw se nw, 32-5-5s; Smith & Lee's Wade 4, se c ne, 3-4-7e.

SEMINOLE COUNTY — Gypsy's Miller 2, se sw se, 24-9-5e; Continental's Maguire 4, sw se se, 24-9-5e; Gypsy's Coker 3, se nw sw, 2-8-5e; Independent O&G's Wood 2, se ne nw, 13-7-6e; Barnsdall Oil Co.'s Factor 3, sw nw se, 13-7-6e; Sinclair O&G's Phillips 12, ne c se, 5-7-7e; Mid-Continent Pet. Corp.'s Smith 19, ne sw ne, 5-7-7e; Magnolia's Hayes 1, sw c nw, 16-7-8e; Magnolia's Dale 1, nw sw sw, 16-7-8e; Gypsy's Payne 9, se c ne, 5-7-7e; Gypsy's Cochran 1, nw ne nw, 28-6-6e; Burke-Greis's Caesar 2, ne sw sw, 21-6-6e; Shell Pet. Corp.'s Caesar 3, sw se se, 20-6-6e; Shell's Caesar 2, ne se se, 20-6-6e; W. B. Pine's Cheparney 2, ne nw ne, 20-6-6e; Mid-Continent Pet Corp.'s Harjo 2, nw sw se, 20-6-6e; Barnsdall's Johnson 4, se sw se, 17-6-6e; Barnsdall's Lusty 4, nw sw ne, 13-5-7e; Texas Co.'s Lewis 4, ne se nw, 13-5-7e.

STEPHENS COUNTY — Ross Southard's McKinley 1, ne c, 25-1n-8w.

TULSA COUNTY — Johnson O&R et al's McClain 1a, nw c se se, 7-19-10e.

KANSAS

BARBER COUNTY — Barbara Oil Co.'s Hamblin 1, c sw nw, 24-33-13w.

BUTLER COUNTY—Aladdin Pet. Co. et al's Metzger 1, c nw se, 23-28-3e; Lario O&G's Gelwick 1, se nw sw, 6-27-4e; Gypsy's Osborne 1, nw c se, 22-26-3e.

COWLEY COUNTY—Ben Gallup's Brant 1, c ne nw, 8-32-5e; J. A. Hull Oil Co.'s Kukuk 20, sw se ne, 24-32-4e; Trees Oil Co.'s Hanlon 1, se ne nw, 25-30-4e.

GREENWOOD COUNTY — Mendenhall et al's Hollister 2, sw ne se, 5-25-13e; Syndicate Oil Co.'s Shook 5, cwl sw nw, 6-24-12e; C. W. Titus' Scott 1, cnl s½ n½ nw, 17-24-12e; Darby Oil Co.'s Beaver 3, c sw se, 25-24-12e; Independent O&G's Thrall 1, nw sw sw, 27-23-10e; Simmons and Amerada's Winegar 2, nw c se, 27-23-11e; The Texas Co.'s Blanck 2, se nw se, 29-22-13e; Darby Pet. Co. et al's Young 6, cnl ne se, 22-22-13e; Amerada's Luthi 7, se ne sw, 29-22-13e.

MARION COUNTY—Empire O&R's Heiburt 1, se sw se, 20-20-2e.

McPHERSON COUNTY—Shell Petroleum Corp.'s Ritz 4, (owdd) se sw sw, 1-20-2w.

MORTON COUNTY—Argus Gas Co.'s Watson 1, c ne, 27-34-40w; Argus Gas Co.'s Dorth 1, c ne 20-34-39w; Argus Gas Co.'s Thompson's 1, c nw, 18-34-39w; Argus Gas Co.'s Thompson 1, c sw, 7-34-39w; Argus Gas Co.'s Mangle 1, c sw, 6-24-39w.

RENO COUNTY—United Petroleum Co. et al's Houston 1, nw c, 4-22-10w.

RICE COUNTY — Braden and McClure's Groves 1, nw ne sw, 27-20-10w; E. H. Langston et al's Mowery 1, c ne, 34-19-9w; McPherson O&G Devel. Co. and Shell Pet. Corp's Jennings ne sw nw, 29-18-6w.

RUSSELL COUNTY — Mid West Exploration Co.'s Witt 33, sw se sw, 4-14-15w.

SEDGWICK COUNTY—Hays et al's Headick 1, sw se sw, 15-26-2e (owdd).

SUMNER COUNTY—Shawver and Continental Oil Co.'s Norrish 1, c ne sw, 27-34-2e.

WOODSON COUNTY—Derby Oil Co. et al's Guy 2, ne nw sw, 29-23-15e.

LOUISIANA

BOSSIER PARISH — Reid Clark et al, Shreveport, Bolinger 1, 21-22n-11w, 990 ft s and 990 ft e of now c of sec.

CAMERON PARISH — Gulf Refg. Co. of La., Houston, M. P. Erwin 1, 13-12s-10w, 2981 ft w and 200 ft n of se c nw of se. Yount-Lee Oil Co., Beaumont, Duhon 1, 22-12s-10w, 3041 ft e and 2068 ft n of sw c of sec; Lacy 4, 27-12s-10w, 981 ft e and 1137 ft s of nw of sec; Portie 1, 22-12s-10w, 2470 ft e and 1230 ft n of sw c of sec; R. Vincent 3, 22-12s-10w, 2470 ft e and 1430 ft n of sw c of sec.

DE SOTO PARISH—Acme Land & Investment Co., Shreveport, Wm. Brooks 1, 8-13n-13w, 660 ft s and 660 ft w of ne c of sec; W. H. Farmer D-1, 32-14n-13w, 330 ft n and 330 ft e of sw c of sec; C. C. Fuller et al 1, 5-13n-13w, 330 ft s and 330 ft w of ne c se of nw; Jessie Fuller 2, 6-13n-13w, 660 ft s and 660 ft e of center of sec; Odes Fuller 1, 6-13n-13w, 330 ft s and 330 ft w of ne c ne of se; Ned McGee 1, 8-13n-13w, 660 ft n and 660 ft w of center of sec; Parker Bros A-1, 5-13n-13w, 330 ft n and 330 ft e of sw c sw of nw; H. B. Sample 1, 7-13n-13w, 660 ft e and 660 ft w of ne c of sec; C. H. Tracy 2, 5-13n-13w, 330 ft s and 330 ft e of nw c nw of sw.

LAFAYETTE PARISH—The Pure Oil Co., Ft. Worth, J. Marmotin 1, 33-8s-4e, 150 ft s and 150 ft e of nw cor of Jule's Marmotin 87 acre lease.

LASALLE PARISH—La. Oil Refg. Corp., Shreveport, La. Central O. & G. Co. 2, 27-10n-2e, 660 ft n and 220 ft e of sw c of sec.

LINCOLN PARISH —Arkansas Fuel Oil Co., Shreveport, Lewis & Co. Ltd 1, 26-20n-4e, 300 ft n and 300 ft w of se c nw of se.

OUACHITA PARISH—Arkansas La. Pipe Line Co., Shreveport, Rea & Green 5, 82-18n-4e, 1150 ft s and 2400 ft e of nw c of sec 2. Hope Producing Co., Monroe, Fairkanks 4, 36-20n-4e, 616 ft w and 623 ft s of ne c of sec. Pipes & Mack, Monroe, Union Gas Prod, Inc. 1, 7-18n-5e, 1598 ft w and 297 ft n of se c of sw; Union Gas Prod. Inc. 2, 7-18n-5e, 296 ft w and 528 ft n of se c of sw.

RICHLAND PARISH — Southern Carbon Co., Monroe, W. M. Hallock 1, 2-16n-6e, 3300 ft n and 760 ft w of se c of sec; J. H. Hemler 1, 1-16n-6e, 600 ft n and 1435 ft e of sw c of sec; J. H. Hemler B-1, 1-16n-6e, 619 ft n and 5024 ft e of sw c of sec; M. L. McCoy C-1, 1-16n-6e, 1880 ft n and 2871 ft e of sw c of sec; M. L. McCoy C-2, 1-16n-6e, 1880 ft n and 5024 ft e of sw c of sec; H. L. Thomason 1, 2-16n-6e, 660 ft n and 660 ft e of sw c of sec; H. L. Thomason et al B-1, 23-16n-6e, 2310 ft w and 100 ft s of ne c of sec; Thomason et al C-1, 14-16n-6e, 1980 ft n and 660 ft w of se c of sec; Mitchell 2, 20-17n-6e, 660 ft s and 660 ft w of ne c of sec.

SABINE PARISH — Mr. M. K. Nagle, Shreveport, M. L. Corley 1, 31-8n-12w, 338 ft s and 412 ft w of se c sw of nw.

ST. MARY PARISH—La. Land & Explor. Co., Houston, Chas. W. Fox 1, 35-16s-12e, 1650 ft s and 965 ft w of ne c of sec.

WEBSTER PARISH — Mr. S. H. Riggs, Little Rock, Ark., L. & A. 1, 1-22n-11w, 200 ft s and 800 ft e of nw c nw of ne.

Mule Creek Test

Lusk, Wyoming.—Argo Oil Company's deep test in the Mule Creek field, eastern Wyoming, has resumed operations following a winter shutdown. This well was started early last year and intended as a test of the Sundance sand which developed water. It is now bottomed 30 feet in the Minnelusa, or Tensleep, formation. The well is in the heart of the field.

QUESTIONS

1. What has the viscosity of oil to do with the success of water flooding in increasing the extraction of oil?
2. What influences the amount of gas held in oil in solution?
3. Why is aluminum paint used on steel storage tanks?
4. What possibilities does Germany have for oil production?
5. What is the Balcones fault system?
6. When was the California gas conservation law passed, and what is its status now?
7. What was the motor vehicle registration for 1929?
8. What is meant by the porosity of a sand for storing oil?
9. What producing practices obtain the most efficient use of gas energy and keep the recovery gas-oil ratio low?
10. What is the status of oil in the reservoir rock?

(*For answers see page* 112)

Gas Well Expected In South Dakota Test

Yankton, South Dakota. — What would appear to be the state's first gas well is being drilled in by J. E. Palensky and his associates in the Tabor State Bank 1, on NW SW 15-98-64 at 1298 feet. A water sand was found above the gas and it was successfully cemented off before drilling into the gas production. If the well does prove commercial it will be South Dakota's first gasser. The state has one producing oil well, brought in on the last day of 1929, not far from the city of Deadwood.

Salt Creek Test

Casper. — Midwest Refining Company's interesting deep test to the granite, in the heart of the famous Salt Creek field, is reported to be showing considerable water and some oil in the top of the Madison limestone at 4421 feet. Casing is to be run and the well will be drilled slowly into the horizon. What oil there is is extremely heavy black crude of asphaltic base.

Wildcat Deep Test

Casper.—After a temporary shutdown of operations on the Midway structure, 12 miles north of Casper, Midwest Refining Company has resumed spudding in the deep test which it is drilling for the account of Saltmount Oil Company. This will be the most interesting wildcat in the Rocky Mountain states because of its location on a structure which has for years been considered favorable, but too deep. Noble & Olsen of Tulsa will drill the well after it reaches some 300 feet where conductor pipe is to be set. It is to be a rotary test.

WILDCATS FROM ALL SECTIONS

OKLAHOMA

WOODS COUNTY—T 28n, R 16w, Sec. 23, Peerless Oil Co., Cromwell 1, c nw ne, show oil and gas 5375-89 ft, sd 5816 ft.

GRANT COUNTY—T 28n, R 4w, Sec. 12, Boucher et al, Dedman 1, sw c se, dr 4880 ft.

WOODS COUNTY— T w7n, R 16w, Sec. 33, Sinclair, Share 1, c ne sw, td 6790 ft.

ALFALFA COUNTY—T 27n, R 11w, Sec. 12, Smith Bros., Forbes 1, ne c se nw nw, sd 1420 ft.

KAY COUNTY — T 27n, R 2e, Sec. 17, Blankenship Pet. Co., Hansen 1, sw c nw sw, dr 1475 ft.

HARPER COUNTY—T 26n, R 23w, Sec. 14, Sinclair, Howell 1, c sw sw, show oil 6711-16 ft, dr 8570 ft.

GRANT COUNTY—T 26n, R 3w, Sec. 23, Otstot Dev. Co., Tapor 1, ne c se, show oil 4355-5515 ft, dr 5288 ft.

KAY COUNTY—T 26n, R 2e, Sec. 32, J. A. Vincent, et al, McNeal 1, nw c ne, sd 2795 ft.

HARPER COUNTY—T 25n, R 20w, Sec. 12, Empire, Bruce 1, sw c ne ne sw, dr 4215 ft.

WOODS COUNTY—T 25n, R 15w, Sec. 10, Bu-Vi-Bar et al, Fee 1, se c sw, sd 6104 ft.

GRANT COUNTY—T 25n, R 4w, Sec. 22, Cowden, Vollmer 1, ne c se ne sw, lost tools 5640 ft, sd.

ALFALFA COUNTY—T 24n, R 11w, Sec. 14, J. V. Bailey et al, Acre 1, c sw ne, water 4649 ft, dr plugs 4660 ft, woc.

GARFIELD COUNTY—T 24n, R 6w, Sec. 9, Pulse & Beamer, White 1, se c nw, hfw 4730-4800 ft, td 5580 ft, fsh job.

WOODWARD COUNTY — T 23n R 17w, Sec. 23, Prairie & Transcontinental, Woodward 1, ne c dr 6750 ft.

GARFIELD COUNTY—T 23n, R 4w, Sec. 32, Shell et al, Loomis 1, c nw nw, dr 5584 ft, r.u.s.t.

NOBLE COUNTY—T 22n, R 1w, Sec. 28, Gypsy et al, Berstram 1, se c nw, dr 4670 ft.

WOODWARD COUNTY—T 21n, R 19w, Sec. 19, Burgoyne Bros., Merklin 1, sw c se ne, sd 1910 ft.

MAJOR COUNTY—T 20n, R 14w, Sec. 23, Kealer et al, Horton 1, c ne ne, spd and sd.

GARFIELD COUNTY—T 20n, R 4w, Sec. 10, Continental et al, Brown 1, cel ne nw sw, 20M gas 5175-80 ft, mudded off 5928-60 ft, comp for 645 bbls, td 5973 ft.

BLAINE COUNTY—T 19n, R 10w, Sec. 13, Washoma Pet. Co., Phillips 1, c nw sw, dr 3060 ft.

LOGAN COUNTY—T 18n, R 2w, Sec. 33, Healy et al, Quier 1, se c sw, td 3970 ft, sd. T 17n, R 4w, Sec. 34, Currie et al, Katchor 1, sw c ne sw, moving in tools. T 17n, R 1e, Sec. 22, Prairie & Slick, Simms 1, ne sw se, dr 2440 ft.

KINGFISHER COUNTY — T 16n, R 7w, Sec. 6, Gault Brown, Boch 1, c nw se (owdd) td 6022 ft, sd.

LOGAN COUNTY—T 16n, R 1w, Sec. 33, Prairie & Slick, Morgan 1, c nw ne, dr 3900 ft.

TEXAS COUNTY—T 6n, R 14e, c.m. Sec. 23, Argus Gas Co., Longston 1, c sw, 12-inch at 500 ft.

CIMARRON COUNTY—T 5n, R 5e c.m., Sec. 27, Magnolia et al, School land 1, c sw nw, dr 600 ft.

TEXAS COUNTY—T 2n, R 18e c.m., Sec. 23, Palo Duro Oil Co., Groves 1, ne sw sw, sd 350 ft.

OSAGE COUNTY—T 24n, R 4e, Sec. 28, Kay County Gas Co., 1, cnl sw sw, show gas 2495-2565 ft and hfw, dr 3860 ft. T 24n, R 5e, Sec. 24, Continental 1, nw se se, Wilcox 3234-58 ft, water, sd 3549 ft.

PAWNEE COUNTY—T 23n, R 5e, Sec. 15, Cochran et al, McFadden 1, ne c sw, rig.

OSAGE COUNTY—T 22n, R 8e, Sec. 5, Peters & P&R, 1, sw c ne, dr 2865 ft.

PAWNEE COUNTY—T 20n, R 5e, Sec. 22, J. M. Scott et al, Jones 1, sw c ne spd and sd.

PAYNE COUNTY—T 18n, R 4e, Sec. 6, F. M. Marrs et al, Tietz 1, sw nw se, lcn. T 17n, R 4e, Sec. 4, Wheeler & Mote, Funnel 1, ne c se, dr 4010 ft.

LINCOLN COUNTY—T 17n, R 5e, Sec. 16, Ed Jilson et al, School land 1, se c sw, dr 3745 ft. T 16n, R 2e, Sec. 35, T. B. Slick, Hammer 1, se c sw nw, dr 4790 ft. T 16n, R 4e, Sec. 2, Deep Rock et al, Prowant 1, nw ne nw, dr 2505 ft.

OKFUSKEE COUNTY—T 13n, R 9e, Sec. 14, Flynn & Morgan, Burton 1, ne sw se, dr 2040 ft. T 13n, R 9e, Sec. 15, Erwin et al, Allen 1, se sw ne, fsh 3635 ft. T 12n, R 9e, Sec. 36, Henry Oil Co., Harjo 1, nw c fsh 2785 ft. T 10n, R 10e, Sec. 25, Transcontinental et al, Lasley 1, sw c nw, sand 3235-53 ft, 51M gas, shut in.

MUSKOGEE COUNTY—T 11n, R 19e, Sec. 21, E. Mills et al, Martin 1, nw c se, td 1001 ft sd.

PITTSBURG COUNTY—T 9n, R 16e, Sec. 32, Pattison et al, McDuff 1, sw nw se, sand 5557-60 ft, dr bridge.

HASKELL COUNTY—T 9n, R 18e, Sec. 10, Marion Oil Co., Sanders 1, nw ne sw, 2M gas 1800 ft, sd 2692 ft.

LATIMER COUNTY—T 6n, R 22e, Sec. 23, Limestone O&G, Shaw 1, nw ne nw, show gas 1570-77 ft, show gas 3100-10 ft, dr 3150 ft.

OKLAHOMA COUNTY—T 13n, R 3w, Sec. 17, Prairie & Slick, Dills 1, c se nw, dr 4785 ft. T 13n, R 3w, Sec. 35, Magnolia & Ramsey, Johnson 1, ne ne sw, dr 6227 ft. T 13n, R 1w, Sec. 13, Tom Slick, Martin 1, c nw nw, td 6965 ft, pb to 6625 ft, w.o.c. T 12n, R 4w, Sec. 17, C. F. Cuniff, St. Joseph 1, sw ne sw se, dr 5919 ft. T 11n, R 2w, Sec. 3, Ryan Consolidated, Lawton 1, ne c nw, td 5657 ft dr 6558 ft.

POTTAWATOMIE COUNTY—T 6n, R 3e, Sec. 36, Sykes et al, Cook 1, sw nw ne, rig.

CLEVELAND COUNTY—T 6n, R 1e, Sec. 20, Brownfield, Corbett 1, c sw ne, dr 5860 ft.

HUGHES COUNTY—T 9n, R 12e, Sec. 29, Canady et al, Canard 1, nw c sw, co 3218 ft.

ROGER MILLS COUNTY—T 12n, R 24w, Sec. 23, Bucy & Stone, Williams 1, c sw, sd 2243 ft. T 11n, R 22w, Sec. 4, J. J. Rook, Davis 1, c nw ne sd 2840 ft.

BECKHAM COUNTY—T 10n, R 22w, Sec. 29, Roy Johnson, Brewer 1, c nw, rig.

CANADIAN COUNTY—T 10n, R 6w, Sec. 1, J. V. Bailey, Robinson 1, c ne nw, sd 150 ft.

WASHITA COUNTY—T 9n, R 20w, Sec. 10, Southern Inv. Co., Musie 1, nw c sd 300 ft.

BECKHAM COUNTY—T 8n, R 22w, Sec. 20, Carson et al, Denby 1, sw se ne, sd 1700 ft.

GREER COUNTY—T 7n, R 22w, Sec. 1, Roy Good et al, Cliffell 1, nw c, sd 730 ft. T 6n, R 24w, Sec. 17, I. T. I. O. et al, Fee 1, c ne, dr by tools 2285 ft.

HARMON COUNTY—T 4n, R 24w, Sec. 17, Harmon-Texas Oil Co., Headley 1, ne c, sd 1510 ft.

COMANCHE COUNTY—T 3n, R 9w, Sec. 3, Okla. Nat. Gas Co., Doebel 1, ne c sw sw, sd 1450 ft.

PONTOTOC COUNTY—T 5n, R 6e, Sec. 8, Magnolia et al, Killcrease 1, sw ne ne, dr 3105 ft.

HUGHES COUNTY—T 5n, R 10e, Sec. 30, Erwin et al, Jones 1, se c ne, water 1860-70 ft, sd 3115 ft. T 5n, R 11e, Sec. 15, J. J. Wright, Roberts 1, se c sw, dr 450 ft.

GARVIN COUNTY—T 4n, R 3e, Sec. 10, C. R. Obermeyer, Stricklin 1, ne c sw, sd 2570 ft.

MURRAY COUNTY—T 2n, R 2e, Sec. 27, Cheafton Royalty Co., Hendricks 1, sw se nw, sd 900 ft.

ATOKA COUNTY—T 3s, R 10e, Sec. 18, Brookshire et al, Guinn 1, nw c sd 80 ft.

CARTER COUNTY—T 4s, R 2e, Sec. 32, Tex-Okla, Drlg. Co., Anderson 1, se ne se, dr 2580 ft.

ABBREVIATIONS

NOTE—The following is the explanation of abbreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million feet or gas; abn—abandoned; bbls—barrels; b.s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in.—inches; lcn—location; m—milling; n, s, e, w—north, south, east, west; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudding; sr—straight reaming; std—standardizing; sw—salt water; td—total depth; ur—underreaming; wo—workover; wosr—waiting on standard rig.

KANSAS

SUMNER COUNTY — Davidson et al's Strickland 1, sw se, 12-35-1w, rig.

MORTON COUNTY—Hydraulic Oil Co.'s State land 1, nw se, 22-34-43w, csg trbl, td 100 ft. Argus Gas Co.'s Little 1, c se¼ 24-34-40w, rig.

STEVENS COUNTY — Argus Gas Co.'s Asher 1, c nw¼ 7-35-37w, ru.

MORTON COUNTY—Argus Gas Co.'s Watson 1, c ne, 27-34-40w, lcn.

STEVENS COUNTY—Argus Gas Co.'s Lipon 1, c ne, 2-34-39w, lcn; Hicks 1, c se, 12-34-39w, r.u.s.t.; Armstrong 2, c sw¼ 4-34-39w, spd; Armstrong 3, c se¼ 3-34-39w, spd. W. Sidwell et al's Kelly 1, sw ne 16-34-38w, sd 1600 ft.

MORTON COUNTY — Argus Gas Co.'s Mangle 1, c sw¼ 6-34-39w, rig.

STEVENS COUNTY — Argus Gas Co.'s Hayward 1, c sw¼, 9-34-39w, ru.

MORTON COUNTY — Argus Gas Co.'s Thompson 1, c sw¼ 7-34-39w, rig.

STEVENS COUNTY—Argus Gas Co.'s Parker 1, c ne 30-34-38w, dr 2735 ft.

MORTON COUNTY—Argus Gas Co.'s Rolla State Bank 1, c nw¼, 8-34-39w, lcn.

STEVENS COUNTY — Argus Gas Co.'s Dreibelbis 1, c ne 9-34-39w, lcn; Dixon 1, c se¼ 18-34-39w, dr 500 ft; Dreibelbis 2, c nw 9-34-39w, lcn; Thompson 1, c nw¼ 18-34-39w, lcn.

MORTON COUNTY — Argus Gas Co.'s Dorth 1, c ne, 20-34-39w, lcn.

STEVENS COUNTY — Argus Gas Co.'s Barrows 1, c sw¼ 32-34-38w, dr 1000 ft.

BARBER COUNTY—Skelly's Temple Ranch 1, sw ne, 13-34-15w, top Viola 5246 ft, dr 5454 ft.

SUMNER COUNTY—Shawver et al's Kratz 2, c sw nw nw, 26-34-2e, spd and sd.

STEVENS COUNTY — Argus Gas Co.'s Christopher 1, c sw, 11-33-39w, dr 2595 ft with 9M gas. McNabb et al's Ramey 1, c sw 11-33-38w, td 2786 ft, est 8M gas, may deepen.

MORTON COUNTY—Argus Gas Co.'s Hayward 2, c nw¼ 31-33-39w, rig; Low 1, c se se, 16-33-40w, rog; Chambers 1, c nw¼ 25-33-40w, ru; Morgan 1, c nw 8-33-39w, lcn.

STEVENS COUNTY — Agate Oil & McNabb's Gregory 1, nw se, 19-33-38w, rig.

BARBARA COUNTY—Valentine's Patterson 1, nw se sw, 2-33-9e, dr 1690 ft.

STEVENS COUNTY—Mangle, Youngren 1, c se nw, 24-32-39w, spd and sd.

MORTON COUNTY — Argus Gas Co.'s Hawes 1, c sw¼ 31-32-39w, lcn.

STEVENS COUNTY—Argus Gas Co.'s Gustafsen 1, c sw¼ 29-32-36w, lcn; Roach 1, c ne¼, 34-32-38w, lcn; Cross 1, c se, 19-32-37w, 8-inch at 2600 ft, r.u.s.t.

BARBER COUNTY—Phillips & Robertson's Powell 1, c se se, 11-32-10w, 5M gas, sd 4023 ft.

COWLEY COUNTY—Prairie's Desbaugh 1, se c lot 27, 18-32-8e, ur 6-inch 2908 ft. Roth & Faurot's Adams 1, c sw ne ne 19-32-8e, 2120-44 ft, sd hfw. Tom Pine's Boyd 1, nw ne, 32-32-4e, rig.

HARPER COUNTY—Beeler et al's Bear 1, c ne 21-31-6w, sd 1830 ft.

SUMNER COUNTY—Hatfield et al's Dauber 1, ne c 18-30-1w, spd and sd.

KIOWA COUNTY—Phillips-Prairie's Bean 1, ne se 10-30-17w, spd.

GRANT COUNTY—McKenna et al's Sullivan 1, ne c 12-29-38w, rig.

KIOWA COUNTY—McKenna et al's Ralston 1, c ne 14-28-20w, ru.

FORD COUNTY—McNabb et al's Fowler 1, c se 26-27-22w, sd 400 ft.

BUTLER COUNTY—T. C. Johnson's Heath 1, ne se 12-27-3e, dr 350 ft.

GREENWOOD COUNTY—Mallory et al's Denchfield 1, se nw 12-27-9e, sd 660 ft.

BUTLER COUNTY — Alladin Pet.'s Metzgar 1, c nw se 23-28-3e, rig.

GREENWOOD COUNTY—L. C. Mahan's Lyons 1, se nw 23-27-11e, dr 775 ft. F. Konkay et al's Rook 1, nw ne ne 7-27-12e, setg 6-inch 1820 ft.

PRATT COUNTY — Wilcox's Unknown 1, ne nw 7-26-15w, td 3483 ft, ur 8-inch.

RENO COUNTY—Valerius' Stevens 1, c ne ne ne, 6-26-7w, td 2900 ft, ur 8-inch.

SEDGWICK COUNTY—Travender et al's McLean 1, se sw se, 23-26-1w, sd 975 ft. Johnson's Petrie 1, sw se 35-26-1w, td 3438 ft, running 6-inch.

BUTLER COUNTY — Gypsy's Osborne 1, nw se 22-26-3e, rog. Liggett, Guenther 1, c se ne nw, 29-26-7e, spd and sd.

FORD COUNTY—Swain et al's Kenthorne 1, c nw 21-25-24w, dr 2250 ft, sd.

EDWARDS COUNTY — Dixie-Amerada's McCarty 1, sw 22-25-17w, dr 4903 ft.

GREENWOOD COUNTY—John Harwood's Good 1, c sw nw ne, 36-25-9e, dr 2015 ft.

GREENWOOD COUNTY—Bundy-Smith & O'Neil's Ford 1, ne nw, 28-25-13e, spd and sd.

PAWNEE COUNTY—Skelly's Milhouse 1, c se 24-23-17w, dr 2380 ft.

STAFFORD COUNTY—Gibson et al's Mueller 1, c sw 11-23-14w, dr 4284 ft.

BUTLER COUNTY—Elam et al's Hopkins 1, c se sw se, 26-23-4e, dr 1785 ft.

STAFFORD COUNTY—Midwest's Richardson 26, se c 36-22-12w, dr 185 ft. Boucher's Groves 1, ne c 9-22-11w, dr 1948 ft; Christensen 1, nw c 22-22-11w, dr 840 ft.

RENO COUNTY — United Petroleum's Houston 1, nw c 4-22-10w, rog. Witt et al's Olsen 1, se nw 14-22-6w, sd 4084 ft, hfw.

HARVEY COUNTY—Gypsy's Shine 1, se sw 26-22-3w, dr 3440 ft. Gypsy's Hege 1, c se nw, se 13-22-2w, dr 2490 ft.

COFFEY COUNTY—Kinsey et al's Bahr 1, se c 24-22-13e, spd and sd.

RICE COUNTY—Burgher's Fair 1, c ne se se 14-21-10w, dr 3985 ft.

McPHERSON COUNTY — Harry Skelly et al's Neufeldt 1, se ne 19-21-3w, rig.

LINN COUNTY — Ferguson & Hiatt's Carple 1, ne se sw, 22-21-22e, rig.

RICE COUNTY — Miller & Brown's Schwartz 1, c sw nw sw 10-20-10w, rig. McCulloch's Williams 1, c ne 35-20-8w, td 2970 ft, ur 8-inch.

McPHERSON COUNTY—Millmack's Decker 1, nw c 11-20-3w, dr 2885 ft.

MARION COUNTY—Empire's Hicbert 1, c se sw se 20-10-2e, rog.

CHASE COUNTY—Steinbushel et al's Stephenson 1, ne sw 4-20-6e, dr 1700 ft, sd.

LYON COUNTY—Alladin & Phillips' Ratcliff 1, sw c 29-20-10e, dr 2390 ft.

RICE COUNTY — Hoffine, Lee & Shell's Sled Farm Corp. 1, c sw¼ 33-19-6w, rig. Danciger's Bell 1, c sw 16-19-8w, fsh, td 3498 ft.

MARION COUNTY—Marshall et al's Higgens 1, ne c 33-19-5e, rig.

CHASE COUNTY—Steinbushel et al's Cook 1, se c lot 27, 31-19-8e, dr 2560 ft. Chase County Gas Co.'s Weirhoff 1, c sw nw 31-19-6e, mach.

RICE COUNTY—Syndicate Oil's Mohr 1, c sw, 2-18-16w, rog. Tatlock et al's Ploog 1, c sw se 33-18-9w, spud and sd. McPherson Gas & Shell's Jennings 1, c ne sw nw, 29-18-8w, rig.

CHASE COUNTY—Urschell et al's Lipps 1, c sw sw 27-18-6e, dr 2020 ft.

SALINE COUNTY—Dixie's Miller 1, c ne se se 9-16-3w, dr 1085 ft.

MIAMI COUNTY—Clark et al's Vaughn 1, se sw 28-17-22e, dr 750 ft.

DICKINSON COUNTY—Hiatt & Durham's Wendt 1, nw c 17-16-2e, spd.

MORRIS COUNTY—Urschell et al's Scott 1, ne sw 6-16-6e, dr 2115 ft, sd. Hankenson et al's Sessnum 1, sw se 24-16-9e, rig.

ELLIS COUNTY—Rush Oil Co.'s Gatewood 1, nw 4-15-20w, dr 3340 ft.

RUSSELL COUNTY—Empire-Prairie's Ochs 2, se ne 23-15-14w, lcn.

DICKINSON COUNTY—Cress et al, Sandon 1, ne c 12-15-2e, ru and sd.

TREGO COUNTY — Dixie-Amerada's Reitmeyer 1, c ne ne 19-14-21w, dr 4230 ft.

RUSSELL COUNTY—Imo O&G's Wambly 1, c se nw ne 7-14-14w, dr 1305 ft.

DOUGLAS COUNTY — Steinbushel et al's Unknown 1, sw ne nw, 34-14-21e, dr 880 ft, sd.

ELLIS COUNTY—Streeter & Stearns' Leiker 1, sw ne 26-13-20w, sd 1294 ft.

GOVE COUNTY—Valerius et al's Todd 1, nw c 24-13-27w, ru and sd.

RUSSELL COUNTY—Austin Drlg. Co.'s Rockefeller 1, se c 6-13-12w, dr 425 ft, sd.

SALINE COUNTY—Twin Mounds Oil Co.'s Weis 1, c 2½ ne nw 20-13-4w, dr 1000 ft.

DICKINSON COUNTY — Emery-Curtis & Bryan's Hevner 1, c nw se 31-13-3e, td 2365 ft. sd. Severs et al's Laringood 1, ne sw 13-13-2e, spd. Kroeger et al's Dische 1, c nw ne ne 17-13-4e, hfw sd 2943 ft.

TREGO COUNTY—Day's Gugler 1, c sw ne 36-12-21w, sp and sd.

PAWNEE COUNTY—Central Commercial's Helms 1, se ne 2-21-20w, dr 1460 ft.

DICKINSON COUNTY — E. H. Morgan's Whitehair 1, nw se 9-12-1e, sd 1768 ft.

SHAWNEE COUNTY — Jenkins & Scott's Hadon 1, ne ese 8-12-14e, dr 2150 ft. Jenkins & Scott's Hadon 1, se nw 10-12-17e, dr 1800 ft, sd.

LEAVENWORTH COUNTY—Forrester et al's Yazel 1, cel se se 18-12-22e, td 1547 ft, hfw.

ELLIS COUNTY—Byrens et al's Fisher 1, nw se 4-11-20w. sd 1000 ft.

RUSSELL COUNTY — Gilbreath et al's Bratton 1, c ne 33-11-13w, sd 1010 ft.

SHAWNEE COUNTY — Jenkins & Scott's Sherman 1, nw ne, 28-10-15e, sd 985 ft.

ROOKS COUNTY—Krueger, Steis, 1, nw se sw, 12-9-16w, sd 570 ft.

GRAHAM COUNTY—Gulf Coast Oil, St. Johns 1, ne sw se, 27-8-25w, dr 2250 ft.

CLAY COUNTY—Chrisler's Tivier 1, sw c 19-8-3e, spd and sd.

SHERIDAN COUNTY — Mandolin's Unknown 1, c se sw sw 27-7-26w, spd and sd.

RILEY COUNTY — Derby-Skow Bros., Landstrom 1, ne c 32-7-5e, sd 2270 ft. Grey et al's Smith 1, ne se 30-6-6e, sd 1970 ft.

MARSHALL COUNTY—Swicker & Simcox, Remple 1, c n½ nw 22-4-9e, td 1000 ft sd. Blazier et al's Runkel 1, se nw 13-2-6e, mach.

MOUNTAIN STATES

UTAH

BOX ELDER—Utah-Pennsylvania Oil Co.'s Penrose 1, nw 3-10n-4w, td 3410 ft. Leonora Mining & Milling Co.'s Swoboda 1, nw 9-8n-7w, co 2755 ft.

CARBON—St. Thos. Oil Co., 1, 1-14s-9e, fsh 2300 ft. Price River Pet. Co.'s Price 1, ne 16-14-10, td 3100 ft.

GRAND CRESCENT—Crescent Oil Synd.'s McCarthy 1, sw 27-21s-19e, gas 2045 ft, td 2200 ft. Utah-Southern Oil Co.'s State 1, 26-21s-33e, dr 2085 ft. Cisco Springs Synd.'s Moss 1, sw 9-20s-23e, fsh pipe 3500 ft.

KANE—Midwest Refining Co.'s Parry 1, se 14-39s-1w, dr 3882 ft. Beaver Valley Oil Co.'s Blackrock 1, ne 20-25s-9w, fsh pipe 3500 ft.

SAN JUAN—Boulder Knoll Oil Co.'s Boulder Knoll 1, nw 17-34w-25e, sd 2640 ft. Continental's Boundary Butte 1, se 22-43-22, set cas 5612 ft.

UINTAH—Home Oil Co.'s Spahr 1, se 8-5s-21e, sd 1165 ft. Maude Ellen Oil Co.'s Neal 1, se 28-3s-21e, td 1850 ft. Western Ventura Corp.'s Krumveida 1, se 6-5s-21e, sd 1515 ft.

UTAH—Diamond Oil Co., 1, nw 16-8s-5e, dr 1750 ft.

MONTANA

CASCADE—Peigan et al, 36-20n-3w, try so water in Sunburst. Eden Oil Co. 1, sw, 27-18n-4e, sd 1326 ft.

DANIEL—Whitetail Oil Synd. 1, nw 10-36n-50e, sd 1467 ft.

FERGUS—Melton Corp., sw 24-21n-17e, set cas 2700 ft, prep to resume.

GALLATIN—California Co.'s Ringling 1, se 35-5n-7e, dr 4555 ft.

GLACIER—Glacier Oil Co.'s Omsberg 1, nw 33-35-5w, dr 350 ft. Kootenai O&G Co. 1, 13-35n-6w, dr 200 ft. Fulton Pet. Corp.'s Hannah 1, ne 28-36n-42w, moving in.

GOLDEN VALLEY—Golden Valley Oil Co., se 28-6-22, show at 600 ft.

LIBERTY—Square Deal Oil Co.'s Federal Land Bank 1, 1-32n-7e, pipe trouble, td 3470 ft. Thompson's Thompson 1, sw 7-34n-4e, dr 2400 ft. Northland O&G Co.'s Yurman 1, 35-33n-6e, runn pipe 1440 ft. Sunburst O&R Co.'s Watford 1, ne 18-36n-6e, dr 2200 ft. Sunburst's McLaren 1, se 9-37-6e, rigging.

MUSSELSHELL — Minnesota-Flatwillow's Ivanhoe Dome 1, 7-11-31, resuming.

PETROLEUM—Minnesota-Flatwillow 2, sw 5-12n-25e. wait for ur 1560 ft. Oregon-Flatwillow Oil Co. 1, 3-13n-26e, dr below 200 ft.

PONDERA—Hiland-Vandaele's Kendall 1, ne 35-30n-3w, sd 4215 ft. Miller Bros.' Bruins 1, nw 17-28n-1w, rig up.

ROSEBUD—Prairie O&G Co.'s N. P. L. 9-10n-38e, sd 2310 ft. Prairie's N. P. 3, 26-10n-38e, dr out cemt 2545 ft. Prairie's N. P. 4, 28-10n-38e, sd 65 ft.

SHERIDAN—Sheyenne O&G Co.'s 1, nw 15-36n-53e, to res 1400 ft.

TETON—Texas Prod. Co., se 2-26-4w, dr 935 ft. Andover Oil Co.'s Carlson 1, ne 5-24n-4w, dr 200 ft. Newman et al's Fitzgerald 1, 26-32n-1w, rig up. Rocky Mtn. O&G Co.'s Salmond 1, ne 4-23n-8w, water trouble, td 1280 ft. Earl Oil Corp.'s 1, se 22-22n-82, dr 1900 ft.

TOOLE—Anaconda Pet. Co.'s Bartholote 1, ne 19-36n-2w, sd 1600 ft. John Thomas et al's Buckley 1, ne 1-37-4w, dr 1645 ft. Black Gold Pet. Co.'s Syrs 1, sw 30-36-28, dr 200 ft. Ergenbright's Beaupre 1, se 32-37-1w, moving in. International Roy. Hold. Co.'s Henry 1, sw 26-35-3e, resuming, td 1900 ft.

VALLEY—T. P. Jones, nw 31-37n-38e, dr 300 ft.

IDAHO

BANNOCK — Norton Bros. et al's Marsh Valley 2, lot 5, sec. 19-10s-37e, dr ahead from 2650 ft.

CLARK—Monida Oil Co.'s Beaver Dome 1, nw 32-14n-36e, repairing to resume 1140 ft.

POWER—Gem State Pet. Co.'s Arbon Valley 1, nw 2-11s-33e, sd 3800 ft.

TETON—Grand Teton Oil Co.'s Horseshoe 1, se 33-5n-44e, dr 2460 ft. Teton Land & Leasing Co.'s Bevan 3, se 28-5n-44e, sd 1580 ft.

WYOMING

BIG HORN—P. & R. Gov't. 3, 24-56-98, fsh tools 4234 ft. Westland Oil Inc., 24-54-95, sd 360 ft. Wisconsin Holdings, 4-55-97, sd 665 ft. Yellowstone Pet. Co., 7-57-97, dr 2780 ft.

CARBON—C. E. Bivens et al's Baggs 1, 35-13-92, co at 2200 ft.

CONVERSE—Pioneer Oil Co., 5-31-70, dr below 3200 ft. Jno. Ackard, 21-31-69, res 3461 ft.

CROOK—W. F. Clark et al, 29-49-66, lcn.

FREMONT—Texas Prod. Co.'s State 1, 36-34-95, 3348 ft. P. & R. 1, 33-34-92, bldg rotary, td 632 ft.

HOT SPRINGS—Midwest's Weeks 8, 6-44-98, dr 1740 ft. Ohio's Smith 1, 8-46-99, cemt 4403 ft. Gebo Cons. 1, se 23-44-95, resuming 1245 ft. C. F. Robertson et al, se 17-43-92, sd 450 ft.

JOHNSON—United O'l Co., 7-47-82, dr 1700 ft. R. C. Tarrant, 4-43-82, sd 600 ft. Dome Synd., 3, 4-43-82w, sd 720 ft.

LINCOLN—Midwest's Grey River, 25-37-117, dr 1800 ft. Mtn. Oil Corp., 36-25-115, dr 700 ft.

NATRONA—Midwest's Midway 1, se 23-35-79, sp 150 ft. Casper Prod. Co., 36-36-81, bldg rig.

PARK—P. & R.'s Pitchfork 1, 14-48-102, dr 2365 ft. Henderson Prod. Co., 31-58-99, sd 3000 ft. Resolute Oil Co., 17-27-101, dr 4607 ft. Cody Pet. Co.'s Danker 1, se 22-57-98, 7M show, to dd.

SWEETWATER—Vermillion Oil Co., 1, sw 16-12-99, 10-in cas cemt 2650 ft, to test gas.

WESTON—Gose Synd., 28-47-65, show at 4856 ft. Updike et al's Fiddler Creek 1, 11-45-64, resume at 1000 ft.

NEW MEXICO

CHAVES—Warman Oil Trust's Blackdome 1, ne 27-13s-24e, sd 1195 ft.

DE BACA—Matador O.l Co.'s Wood 1, se 6-4n-20e, dr at 2930 ft.

EDDY—Van Horn et al, se 18-19-s-26e, abn 2180 ft. R. D. Compton's State 1, nw 2-20s-25e, dr 1760 ft. Henderson et al's Grier 1, nw 21-16s-31e, drilling at 2980 ft. Lockhart et al's Parke 2-X, se 23-17s-30e, rigging. Leonard & Levers' State 2, 21-17s-29e, 9½M at 2283 ft. Pueblo Oil Co.'s Russell 5, nw 18-17s-31e, dr 3170 ft.

LEA—Shell Pet. Corp.'s State 1, ne 32-18s-38e, dr 3485 ft. Shell's State 2, nw 19-18s-38e, dr 3200 ft. Empire's Closson 1, se 6-22-36, dr 4160 ft. Walker et al's Terry 2, se 10-19s-38e, dr 1530 ft. Empire's Fowler 1-C, ne 31-18s-38e, dr 775 ft, sd indef. Morton et al's State 1, nw 32-11s-38e, dr 4728 ft. Barnsdall Corp., 1, se 28-16s-38e, plugged 5160 ft. Cranfill & Reynolds' State 1-C, sw 16-23s-36e, water 3860 ft. Fisher & Lowrie's State 1, nw 11-18s-36e, dr 4850 ft. Humble O&R Co.'s Bowers 2-A, se 30-18s-38e, dr 700 ft. Walker et al's Terry

2, se 10-19s-38e, dr 1020 ft. Texas-Pacific's State 1G, 24-18s-37e, dr 2715 ft. Hobbs High Oil Co.'s State 1, se 35-18s-38e, standardized 276 ft. Ohio Oil Co.'s State 1, se 32-18s-39e, dr 2980 ft. Ohio's State 1, 15-29s-36e, sd for water 917 ft. Maljamar O&G Corp.'s Baish 3, nw 21-17s-32e, dr 2900 ft. Midwest Refg. Co.'s State 36, sw 10-19s-38e, dr 1955 ft. Midwest's State 13, nw 15-19s-38e, dr 1602 ft. Midwest's State 1, nw 15-19s-38e, dr 397 ft. Midwest's E. H. and M. Byers 33, ne 4-19s-38e, dr 1530 ft. Ohio Oil Co.'s State 1, 30-18s-38e, dr 2090 ft. Landreth Prod. Co.'s State 1, 7-18s-38e, dr 640 ft. Amerada Pet. Corp.'s McKinley 1, nw 30-18s-38e, dr 2500 ft. Calif. Co.'s State 1, se 29-18s-38e, ready to sp. Gypsy Oil Co.'s Grimes 1, nw 32-18s-38e, dr 1800 ft. Prairie O&G's Crump 1, ne 15-19s-38e, dr 1950 ft. Texas Prod. Co.'s State 1-C, ne 25-18s-37e, dr 750 ft. Geo. F. Getty Pet. Co.'s McKinley 1, ne 30-18-38, dr 415 ft.

McKINLEY—J. W. Halsell's Santa Fe 1, 17-18-9w, fsh 3250 ft. Williams et al's A. T. S. F. 1, sw 19-18n-8w, dr 1965 ft.

RIO ARRIBA—Berringer et al's Hartman 1, ne 8-29n-7w, sd at 825 ft. San Juan Pet. Co.'s Government 1, sw 14-30n-7w, sd 270 ft.

SAN JUAN—Dorothy Oil Co.'s Terwilliger 2, 29-30-9w, dr 1925 ft. Southern Union Gas Co.'s Day 1, se 20-28n-10w, sd 1455 ft. Childers Dr. & Pr. Co.'s Westwater 2, nw 24-31n-16w, sd 2525 ft. Reserve Oil Co.'s Shaffer 2, ne 1-21n-14w, sd 780 ft.

SANDOVAL—Mayflower O&G Co.'s Marion 1, se 23-20n-2w, dr 1910 ft.

SAN MIGUEL—Pioneer O&G Co.'s Thunderbird 1, nw 14-15n-16e, waiting line 2355 ft. Starr Oil Co.'s Adams 1, ne 25-17n-17e, 6⅝-in cas at 3271 ft. Cibola Pet. Co.'s Crown 1, se 9-13n-14e, ready to resume 320 ft. Hershfield Dev. Co.'s Cabra Springs 1, ne 21-12n-22e, sd 735 ft.

SOCORRO—Lockhart & Co.'s Stackhouse 1, 14-3s-6e, dr 2600 ft.

TORRANCE—Williams et al's Staplin 1, ne 16-8n-10e, sd 2038 ft. J. B. Witt O&G Co.'s Kutchem 1, 12-7s-7e, dr 600 ft.

VALENCIA—Rio Puerco Oil Co.'s N. M.-Ariz. Land Co. 2, ne 13-6n-2w, waiting for pipe 3145 ft. Acme Oil Co.'s N. M.-Ariz. Land Co. 1, 26-6-3, dr 4735 ft. Harlan et al's Harlan 1, 5-6n-2e, sd 4230 ft.

COLORADO

ADAMS—N. M. Slatt's Hill 1, se 27-25-64w, dr 1516 ft.

ARAPAHOE—McDebb Dr. Co.'s Fitzsimmons 1, 7-45-66, dr 5532 ft.

ARCHULETA — Outwest Investment Co.'s Fitzhugh 1, sw 34-33n-1e, ready to sp.

BENT—Continental's Pipe Springs 1, se 27-27-49, dr 6035 ft.

BOULDER—Reliance Oil Co.'s Erickson 1, nw 33-2n-70w, dr 3145 ft.

DELTA—Crawford O&G Co.'s McKissen 1, ne 28-15s-91w, dr 1030 ft.

DOLORES—Transcontinental's Glade 1, nw 30-41n-16w, co 5900 ft.

ELBERT—Belmont Oil Co.'s Mahler 1, se 4-6-59w, standardizing 3720 ft.

FREMONT—Westerville Oil Co.'s State 1, nw 16-18-69, sd 1214 ft. Hammond & Roscoe's Beltrame 1, se 1-19s-70, sd 1800 ft.

GARFIELD—Fulton Pet. Co.'s Permit 1, ne 8-8s-102w, rig up.

JACKSON—Midwest's Rich. 21X, nw 9-6n-80w, dr 3705 ft. P. & R.'s Hendershot 1, ne 2-6n-81, dr 3757 ft.

JEFFERSON—Ruby Hill O&G Co.'s Braden 1, se 24-4s-59w, res 3568 ft.

HUERFANO — Parker Club and Kinney-Coastal's Fee 1, se 4-28s-68w, prep to strrm at 4116 ft. Elliott et al's Abeyta 1, nw 31-27s-65w, lcn.

LAS ANIMAS—Trinidad Dev. Co.'s Flontz 1, se 23-32-63, set 5 3/16-in cas at 2700 ft, water trouble. American Helium Gas & Oil Co.'s Boling 1, sw 3-29-60, lost tools at 160 ft and skidding rig.

LARIMER—Mosher et al's Reed 1, nw 28-4n-69w, bailer lost 3160 ft. Barrows et al's Barrows 1, se 7-11-68, sd 2310 ft. Continental's Scott 5, nw 6-9n-68w, dr 4310 ft. Deininger et al's Rembey 1, nw 35-4n-70w, to resume at 354 ft. Standard of Colo.'s Hertha 1, nw 21-4n-69w, fsh 2821 ft. Erbe Oil Co.'s Monroe 1, ne 26-11n-69w, lcn.

LA PLATA — McGarr Pet. Corp.'s Red Mesa 1, ne 27-33n-12w, dr 1175 ft. Detroit Oil Assn.'s Oibert 1, se 9-35n-12w, dr 2600 ft

LINCOLN—Kelly Oil Co.'s State 1, ne 26-14n-57w, sd 3350 ft.

MESA—Argo Oil Co.'s Hoel 1, ne 23-8s-104w, pipe trouble 3000 ft.

MOFFAT—McLaughlin et al's Williams 1, 2-3-92, abn 4515 ft. Vermillion O&G Synd.'s 1, se 23-9n-100w, resuming at 642 ft. Texas Prod. Co.'s Berlin 1, ne 9-12n-100w, dr 2507 ft. Midwest's Hannawalt 24, 4-6n-92w, dr 2706 ft. Mtn. Fuel Supply, 25-12-101, plugging back to gas at 2180 ft. S. H. Koeghan et al's State 1, sw 16-4n-101w, dr 75 ft.

MONTROSE — Uncomphagre O&G Co.'s Colorado 1, nw 27-50-10, resuming at 2031 ft.

MORGAN—Ind. Ter. Illum. Oil Co.'s State 1, ne 16-1n-7w, dr 1090 ft.

PUEBLO—Beulah Dome Co.'s Hedland 1, se 7-23-67w, sd 932 ft.

RIO BLANCO—Texas Prod.'s Potter 1, se 30-2n-69w, fsh 5986 ft. White Eagle's Fordson 1A, se 9-2s-96w, dr 4000 ft.

ROUTT—Gillespie et al's Omholt 1, se 29-4n-87w, ready to sp.

WELD—Platte Valley Pet. Corp.'s Patterson 1, sw 24-6n-61w, dr 5855 ft.

WASHINGTON—Middlemist Oil Co.'s Middlemist 1, se 14-4s-56w, set 15½-in cas at 1030 ft.

YUMA—Phillips Pet.'s Andrews 1, nw 3-2s-42w, ur to 5055 ft.

NORTHERN CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
LOMPOC—		
Ohio's Hollister 1, 2-6-34	*	4650

KERN COUNTY—

BELRIDGE—J. H. Kennedy's No. 1, 5-29-21, dr gray sand 1818 ft. Rio Grande's Garcia 1, 18-28-22, co 3680 ft. K. C. Wallace's No. 1, 32-29-21, dr shale 3000 ft.

BUTTONWILLOW—Milham Exploration's Kern 6, 8-28-23, m on cas 4945 ft.

EDISON — F. M. Sayre's No. 1, 5-30-29, swabbing water, td 4222 ft. Shell's No. 2-1, 33-29-29, dr hard sand 4200 ft.

GOULD HILLS—Bomka & Ball's Larson 1, 12-29-20, dr shale 2700 ft. Casa Mira Oil Co.'s Theta 1, 20-28-20, dr shale 3450 ft.

LERDO—Shell's Lee 1, 23-28-26, dr hard sand and shale 1313 ft.

McKITTRICK—Ohio's M. M. 1, 32-20-22, dr shale 5350 ft.

PATTIWAY—H. A. Bardeen's Klipstein 1, 18-10-23, co 895 ft; Ramsey 1, 10-10-23, dr shale 1800 ft.

ROUND MOUNTAIN—Gerrard & Phillips' No. 1, 32-27-29, fsh for tools 1640 ft.

SEMITROPIC—Shell's Williams 1, 17-27-23, dr 450 ft.

SHALE HILLS—Girard Oil Co.'s Watkins 1, 28-26-18, dr shale 922 ft.

TEMBLOR HILLS—Shell's Gonyer 1, 32-32-23, dr shale 3566 ft.

WEED PATCH—Shell's Porter Day 1, 29-30-29, dr hard sand 4065 ft.

SANTA BARBARA COUNTY

CAMPBELL'S POINT—Bolsa Chica's Augur Permit 191-1, 24-4-9, rig.

CARPENTERIA — Continental's Bailard 124-1, dr shale 4460 ft. George F. Getty's McDonald 120-1A, dr out cmt, td 1025 ft.

CASITAS—Standard's Shepard 1, 26-4-25, dr shale 2470 ft.

CASMALIA—Wildcat Oil & Royalty Co.'s Donovan 1, 20-10-35, sdtr drill pipe 4470 ft.

EL TORO—Shell's Fithian 1, 18-4-25, dr hard sand 2965 ft.

GATO RIDGE—Barnsdall's Teg. 1, 9-8-32, dr shale 1122 ft.

GOLETA—Walter Barnhart's Pomatto 1, 1-4-29, plugging back from 2155 ft. Carrey and Adams' Montecito 1, 1-4-28, 6⅝-inch cas re-cmt 2495 ft. General Pet.'s Crandall 138-1, dr shale 3915 ft; More 2, fsh for drill pipe, td 4327 ft.

LOMPOC—Prairie Oil & Gas' Shyver 1, 11-7-35, dr gray sand 2650 ft.

POINT CONCEPCION—Standard's Gerber 1, sr 4600 ft.

PURISIMA — Vaqueros Major Oil Co.'s Arnold 1, 5-7-33, dr shale 665 ft.

SANTA MARIA—O. C. Fields Gasoline Co.'s Norswing 1, 8-9-33, dr shale 3220 ft.

SANTA YNEZ—Deuell & Cole's Brinkinoff 1, 9-7-30, dr sand 1055 ft.

VENTURA COUNTY

CAMARILLO—Camarillo Oil Syn.'s Calleguas 1, dr 328 ft.

FILLMORE—General Pet.'s Burson 1, 6-19, dr shale 1655 ft. Oil Search Corp.'s McNabb 1, 29-4-19, sd 105 ft.

HOPPER CANYON—George H. Hadley's No. 1, 13-4-9, dr hard sand 790 ft.

PIRU—Bolsa Chica Oil Corp.'s Snow 1-A, 4-4-18, dr gas sand 2260 ft.

RINCON CREEK—Associated's Snowball 1, 19-4-24, dr hard sand 1820 ft.

SANTA MONICA MOUNTAINS—Olympic Corp.'s Calabasas 1, 18-1-17, dr shale 4255 ft.

SATICOY—Standard's Citrus 5, 10-2-22, re-dr 7950 ft.

SIMI—Richfield's Tapo 1, plugged back to 1800 ft.

SOMIS—Shell's Everett 1, rigging up rotary.

VENTURA—Prairie Oil & Gas' Sexton 1, 30-3-22, dr sandy shale 4350 ft.

MISCELLANEOUS

FRESNO COUNTY — Fresno-Madera Oil Co.'s No. 1, 18-12-12, dr gray sand 4333 ft. John Knudsen's No. 1, 14-21-14, dr shale 1736 ft. Rio Grande's Edison 1, 35-13-16, dr shale and hard sand 4690 ft. Richfield's Schrock 1, 33-22-16, rigging up. Western Gulf's Welsh 1, 26-15-12, dr shale 4900 ft.

KINGS COUNTY—Wellport Oil Co.'s No. 1, 9-24-17, loosening pipe, td 3625 ft. J. E. O'Donnell's No. 1, 7-23-20, cmt 8¼-inch cas 3385 ft, td 4310 ft.

MENDOCINO COUNTY—Twin State Oil Co.'s Soldani 1, 14-12-17, dr shale 3300 ft.

MONTEREY COUNTY — Standard's Piedmont 1, 23-22-7, co 4325 ft. Union's Paige 1, 8-22-8, dr gray sand 3222 ft.

SAN LUIS OBISPO COUNTY—Panorama Oil Co.'s Panorama 1, 7-31-21, fsh for 6¾-inch cas, td 4010 ft. Paso Robles Syn.'s Emerick 1, 34-27-15, dr gray sand 3900 ft. Pismo Dome Oil Co.'s Pricco 2-A, 5-31-13, dr shale 2360 ft. Texas Pacific Coal & Oil's No. 1, pulled 5 3/16-inch cas, td 4000 ft.

SOUTHERN CALIFORNIA

BELLFLOWER — Clearwater Pet. Co.'s Candler 1, co 5150 ft.

FULLERTON—L. C. Simmell's Todd 1, dr hard sand 765 ft. Brea Canyon Oil Co.'s Fee 47, dr sand and shale 3600 ft.

HUNTINGTON BEACH—Vaqueros Major Oil Co.'s Permit 194-1, sd after validation.

MANHATTAN BEACH—California Ventura Oil Co.'s Smith 1, sd 6530 ft.

MONETA—Ohio's Fish 1, dr hard sand 4565 ft.

NEWHALL—Consolidated Oil Co.'s Hammond 1, dr shale 1650 ft.

NEWPORT—H. L. Hall's No. 1, 10-inch cas cmt 700 ft. Standard's Irvine 1, bldg road to tideland lcn.

PUENTE HILLS — Bardeen Pet. Co.'s Didier 1, lcn. Grimes-Girrard's No. 1, co 1495 ft. Keck and Hall's Belyes 1, lcn. Marcell Pet. Co.'s Marcell 1, dr shale and streaks oil sand 1833 ft. Union's Rimpau 1, dr hard sand 4404 ft; Sansinena 111, dr shale and oil sand 3288 ft. Western Gulf's Diamond Bar 1, dr shale and gray sand 4340 ft.

ROSECRANS—Burlingham Pet. Co.'s Hardy 1, dr shale 3275 ft. William Dillers' Cas. 1, dr gray sand 6125 ft. McMahon and McDonald's Kirst 1, rig.

SAN FERNANDO—Shell's Andrews 1-1, dr hard sand 2450 ft.

SAN JOSE HILLS — Richfield Oil Co.'s Benadette 1, lcn.

TORRANCE—Archer Oil Co.'s Watson 1, Rio Grande Oil Co. will take over.

RIVERSIDE COUNTY—Trabuca Oil Co.'s 1, dr hard shale 4400 ft.

MISSISSIPPI

ALCORN COUNTY—Alcorn Pet. Co.'s Matthews 1, 14-2-7, fsh for 4 joints 6-in cas preparatory to running 5 3/16-in cas at 2393 ft, recovering 2 gal light oil daily, td 2735 ft.

CHICKASAW COUNTY—Hightower & Golson's Fleming 1, 20-13-3w, fsh for tools hung while driving 8¼-in pipe, td 1414 ft. Fleming 2, 15-13-2w, dk pat.

HINDS COUNTY (Jackson Distr.)—Mrs.

Easiest Firing Quickest Heating

KEWANEE *Oil Country* Boilers

These two outstanding features of Kewanee Boilers are reasons for their rising popularity in the oil fields. Hundreds already in use and satisfactorily serving their owners are being added to daily by enthusiastic purchasers who have come to know the superiority of Kewanee Oil Country Boilers.

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Ellia Rawls Reeder's State Land 1, 25-6-1e, fsh for 400 ft 4-in dr pipe, td 2905 ft. Jackson O&G Co.'s Mayes 1, 2-5-1e, supplying gas to nearby test through separator, td 2585 ft. Taylor 1, 35-6-1e, cored sand showing oil, set 6⅝-in cas 2880 ft, arr plug, td 2910 ft. Central Cotton Oil Co. 1, 3-5-1e, dk. Louisiana G&F Co.'s Harris 1, 35-6-1e, set 8⅛-in cas 2506 ft, reached base chalk 2904 ft, dr igneous material and streaks chalky lime 3125 ft. Love O&G Co.'s Bridges-Hilzim 1, 35-6-1e, sp, wo. Gordon 1, 2-5-1e, dk. Love Pet. Co.'s Mendoza 2, 12-5-1e, dk. Interior O&G Co.'s Mayes 1, 2-5-1e, dk. Tri-State O&G Co.'s E. S. Wilson 1, 23-6-1e, dk. Dome O&G Co.'s Elton 1, 5-4-1e, set 9-in cas 818 ft, dr plug, coring 830 ft. Magnolia State Oil Co.'s Brown 1, 19-6-1e, dk. Weir et al's Holliday & Ross 1, 8-6-2e, dk. Cane River O&G Co.'s Lufkin 1, 15-5-1e, dk.

KEMPER COUNTY (De Kalb Dist.)—W. W. Jones' Rosenbaum 1, lcn not given, dk.

LA FAYETTE COUNTY—F. E. West et al's May 1, 22-10-1w, rigged up wo.

LAUDERDALE COUNTY (Meridian Dist.) Lauderdale O&G Co.'s Lackey 1, 2-7-16, set 8¼-in cas 2790 ft, coring broken sand, lime and shale with small gas show 3276 ft. Meridian Nat. Gas Co.'s Mattie Houser 1, 33-8-18, sd in sandy shale 2826 ft.

MONROE COUNTY (Amory Dist.)—Amory Pet. Co.'s Hall 1, 8-13-17, pulling pipe, arr to abn, td 3045 ft. Amory Dev. Co.'s Bourland 1, 2-13-19, arr resume dr in lime, td 2912 ft. Park Bowser's Cowart 1, 2-12-19, sd 85 ft.

RANKIN COUNTY (Jackson Dist.)—Gulf Ref. Co.'s Rainey 1, 13-5-1e, hit base of chalk (348 ft thick), at 2848 ft, coring serpentine 3083 ft. Interior Oil Co.'s Moore 1, 28-6-2e, arr set 10-in cas at 900 ft. Pearl River O&G Co.'s Littlefield 1, 12-5-1e, dk.

WARREN COUNTY (Vicksburg Dist.)—Henderson et al's Dornbusch 1, 8-18-15, sd, wo with ds stuck in hole, td 2475 ft.

WEBSTER COUNTY—Cumberland Oil Co.'s Henley 1, 15-21-11, ta 1865 ft.

YALABOUSHA COUNTY (Water Valley Dist)—J. D. Collette et al's Blackner 1, 14-11-4w, topped red beds 2316 ft, sr at 1500 ft to set 8¼-in cas 2300 ft, td 2434 ft.

ALABAMA

HOUSTON COUNTY—J. R. Sealey's Fee 1, 13-1n-27e, changing from cable tools to rotary, td 3100 ft.

LAUDERDALE COUNTY—P. J. McAlpine's O'Neal Hrs. 1, 8-2s-13w, sd in limestone, wo new wire line, td 1400 ft.

MORGAN COUNTY—Albany-Decatur O&G Co.'s English 1, 6-6-4, fsh for cas, td 4130 ft.

SUMPTER COUNTY—B. W. Bates' Fee 1, 3-18-1w, ta 1200 ft. Fee 2, 3-18-1w, rigging up wo.

WASHINGTON COUNTY—Hobson et al's Wilson 1, 27-7-1w, sd in limey shale 881 ft. Hobson Bros. 1, 9-8-2w, sd 1450 ft. Oscar Brown's U. S. Land & Cotton 2, 25-3-2, last report dr 720 ft.

TENNESSEE

DECATUR COUNTY—Chester County O&G Co.'s Montgomery 1, set 6-in cas 1045 ft, dr 1872 ft.

ARKANSAS

Completion

UNION COUNTY—
Wisinger & Ball, Rodgers 1, 31-17-15 12 2221

CALHOUN COUNTY—Tidal Oil Co.'s Ark. Timber 1, 3-16-14, rig up.

COLUMBIA COUNTY — L. E. Parker's Franks 1, 25-19-22, sd 2831 ft.

CLEVELAND COUNTY — Donnell et al's Fee 1, 35-11-9w, dr 840 ft.

CLEBURNE COUNTY—Cosden Oil Co.'s Donithan Lbr. Co. 1, 19-9-10, set 10-inch cas 2485 ft, 1200 ft sw in hole, sd wo, td 3050 ft.

DREW COUNTY—McClintock & Goedke's Ogle 1, 33-13-5, set 6-inch cas 1800 ft, fsh for ds 2625 ft.

FAULKNER COUNTY—Gold Creek O&G Co.'s Stermer 1, 17-4-13, TA 3872 ft; Stermer 2, 17-4-13, rig up wo.

FRANKLIN COUNTY — Ozark Nat. Gas Corp.'s McElroy 1, arr plug back, td 3100 ft. Red Bank Oil Co.'s Hamm 1 (formerly Edtin 1) 33-10-26, dr 643 ft.

GARLAND COUNTY—H. H. Given's Garrett 1, 1-13-19w, dr 3485 ft.

GRANT COUNTY—Jones & Watkins' Meek 1, 5-4-11, TA 1400 ft.

JOHNSON COUNTY—Ark. La. Pipe Line Co.'s Cline 1, 16-10-24, dr 617 ft. Blackwell O&G Co.'s Wyver 1, 21-8-23, jarring out 6-inch cas at 2100 ft, td 5600 ft. Western Coal & Mining Co. 1, 20-9-25, rig up.

LOGAN COUNTY—M. W. Greesom's Perk 1, 21-8-24, sd 1309 ft. J. H. Flowers' White 1, 13-6-26w, ur 5 3/16-inch cas at 3510 ft, td 3600 ft.

LAWRENCE COUNTY — Marguerite Dev. Co.'s Broadway 1, 31-17-1, sd 45 ft.

LITTLE RIVER COUNTY—Grote et al's Allen 1, 31-12-31, TA 2941 ft. C. F. McDonald's Black 1, 12-13-28, sd wo 2180 ft. Buck Oil Co.'s Taafe 1, 23-12-32, coring lime 2376 ft.

MADISON COUNTY—J. W. Baxter's Hallem 1, 17-16-26, lcn.

NEVADA COUNTY — Roy Davis et al's Henry et al 1, 10-12-29, rigged up wo.

OUACHITA COUNTY — Anderson et al's Buck 1, 7-15-17, fsh for 1 joint ds at 2735 ft. Magnolia Pet. Co.'s Grayson 2, 21-15-19, set 8⅛-inch cas 1478 ft, set 5¾-inch cas 2118 ft, cored shale and oil sand 2182-93 ft, 250 ft fluid 50 per cent sw in hole, arr pump, td 2193 ft. Buffalo Oil Co.'s Campbell 1, 11-15-19, rig up.

PIKE COUNTY—Theo. Davis, Tr.'s, Ruth Wilson 1, 25-5s-26w, sd 718 ft.

POPE COUNTY—Cosden Oil Co.'s Mo. Pac. R. R. 1, 13-9-19w, set 8¼-inch cas 3812 ft, dr lime 4037 ft. Ark. La. Pipe Line Co.'s Crotts 1, 16-9-21w, set 7-inch cas 1256 ft.

SEBASTIAN COUNTY—M. W. Gressom's Spears 1, 9-7-29w, dk. Lavaca O&G Co.'s Cason 3, 21-8-30, dk; Southland 1, 28-8-30, dr shale 2650 ft; J. O. Ingram 7, 22-8-30, dk; Cason 9, 21-8-30, bldg dk. A. C. Williams, Jr.'s, Patterson 1, 27-8-30, lcn.

SCOTT COUNTY — Heavener O&G Co.'s Reser 1, 36-4-26w, fsh for tools, td 1420 ft.

ST. FRANCIS COUNTY — Brownlee Oil Co.'s Whitted 1, 28-4-1w, dr 2393 ft.

UNION COUNTY—H. L. Hunt's Pratt 6, 7-18-15, fsh for liner td 2214 ft; Trammell 1, 28-18-12, set 12½-inch cas 208 ft, dr 1950 ft. Malloy & Co.'s Robertson 3, 6-18-15, lcn; Goodwin 4, 36-17-16, set 6⅝ cas 2186 ft, 37 ft bro sand running 2-inch tub, td 2239 ft; Murphy 1, 1-18-16, rig up. Wisinger & Ball's Rodgers 1, 31-17-15, set 6⅝ cas 2170 ft, pumping 12 bbls oil 88 bbls sw, td 2221 ft. S. B. Hickman et al's Hogg 1, 35-16-17, set 10-inch cas 100 ft. Southern Crude Oil Purch. Co.'s Oliver 1, 11-18-13, coring 2242 ft. Lion O&R Co.'s Ballard 1, 10-18-13, coring sw sand 4487 ft. J. W. Olvey's G. G. Simmons 1, 15-18-13, cored sw sand 3547 ft, sd 3547 ft. Federal Pet. Co.'s Tillman 1, 9-18-13, lcn. Marine Oil Co.'s Winn Est. B-3, 10-18-13, sp set 12½-inch cas 308 ft, dr 1502 ft. Simms Oil Co.'s Simmons B-1, 10-18-13, stuck 8¼-inch cas at 3526 ft, arr plug 1 ft sand, td 3527 ft. South El Dorado Oil Co.'s R. Traylor 1, 9-19-15, set 10-inch cas 93 ft. Modisette Drilling Co.'s Union Sawmill 4, 14-18-14, lcn. Carter et al's Burnside 1, 23-18-14, sp set 10-inch cas 109 ft, dr water well. Ark. Fuel Oil Co.'s Burns 1, 14-18-17, sp dr 50 ft. O. W. Estes' Telford 1, 35-17-15, dr gumbo 2872 ft. Root Ref. Co.'s Jerry 2, 21-17-14, sp dr 40 ft. Sunby et al's Perdue 2, 23-16-14, sp dr 55 ft.

WASHINGTON COUNTY—Taylor et al's Runny 1, 1-13n-29w, dk. Lincoln Lease Holding Co.'s Townsite 1, 30-15-32, sd 1500 ft. C. H. Willoughby's Jones 1, 34-16-30, sd 2150 ft. O'Hara & Shetterley's Boyd 1, 12-16-32, TA 850 ft. Delbert Graves' Cunningham 1, 14-15-32, sd in gray sand 692 ft.

WHITE COUNTY—Letona Synd.'s Letona 1, 35-9-8, set 5 3/16-inch cas 3500 ft, sd 3650 ft.

VAN BUREN COUNTY — J. S. Martin's Scanland 1, 5-9-13, sd 50 ft.

YELL COUNTY—T. Luckett's Balcon 1, 36-7n-21w, re-cemtd 6⅝ cas 3637 ft, td 3710 ft.

SOUTHWEST TEXAS

ATASCOSA COUNTY—Frontier Oil Co.'s Gray 1, 3½ mi s Somerset field, sd 2078 ft.

BASTROP COUNTY — Abernathy (Pacific Oil and Gas Co.) Allredge 1, sd 2397 ft. Botts et al's Alexander 1, sd 1360 ft. Superior Oil Co.'s Moore 1, Glasscock survey, sd 3327 ft.

BANDERA COUNTY — Sun Oil Co.'s Wisenhaunt 1, sec 69, ru.

BEXAR COUNTY — Penn-Tex Oil Co.'s Sendemer 1, 107 ac tr in Manchaca survey, 9 mi se San Antonio, dr 375 ft. Dingman Drilling Co.'s Cassin 1, 1800 se of Kelso 1, dr 840 ft. Moore and Juar's Ellison 1, dr around 2200 ft. Swearingen Oil Co.'s Fee 1 dr. Henry Yelvington (formerly Swift and Fisher) Beck 1, 10 mi e of San Antonio, 1350 ft.

BEE COUNTY—Humble's McKinney 3, 60 ft s of No. 2, ru; Mauldin 1, lcn. Barnsdall Oil Co.'s Courtney 1, lcn. Union Producing Co.'s Ray 9, 600 ft s of No. 8, ru; Ray 10, 450 ft s Morgan McKinney 1, lcn; Ray 11, dk. Houston Oil Co.'s Pettus Town 1, center blk 36, lcn; Newman 1, lcn. Ed Prices's Weiss 1, 2640 ft out of north center of tract, dr 1800 ft. Fisher and Wiggins (Grayburg Oil Co.) Kimball 1, sd 3337 ft. Nichols et al's Hicks 2, 300 ft se of No. 1, completed, large gasser at 3627 ft. Cosden Oil Co.'s McKinney 1, John Pace survey, completing as oil well at 3657 ft. Rowan and Tongs' Freeman 1, dr 3910 ft. Trinity Drillers' 1, west of Pettus, dr water well.

BROOKS COUNTY — Humble's Singer 2, sec 312, sp in. Houston Oil Co.'s Holbein-Wormser 1, excellent gas show at 6003 ft, 800 lbs pressure, plugging back to 3800 ft, no later report; Holbein-Wormser 2, Saenz part of Palo Blanco de Maguellas grant, lcn. Midwest Public Utilities' Garcai 1, dr.

CALDWELL COUNTY—Gulf's T. Briscoe 2, dr 2620 ft. Trinity Driller's McMullen 1, sd 3441 ft.

DE WITT COUNTY—Roe et al's Reinhardt 1, dr 2324 ft. Republic Prod. Co.'s T. E. Clark 1, 4 mi s of Yorktown, dr. Louisiana Oil Ref. Co.'s Klanerman 1, 400 ft s of n line, 400 ft w of e line of 101 acre tract in R. Galletty league) sp in.

DUVAL COUNTY—Bain and Miller's Benavides 1, sec 173, dr 2300 ft. Callahan, Howard and Smith's Luby 1, sec 24, dr 2350 ft. Cole Pet. Co.'s Benavides 68, blk 11, sec 14, temp. plugged at 4169 ft. Humble's Koehler 44, sec 424, dr; Koehler 45, set csg at 286 ft. Magnolia's Lundell 1, lcn. Simms Oil Co.'s Dinn 9, dr. Southern Oil Co.'s Welder Wood 1, sec 215, dr at 2200 ft. Southern Crude Oil Purchasing Co.'s Dunn 1, sec 480, dr 3623 ft.

FAYETTE COUNTY — Mouldon Oil Co.'s Kerr 1, dr about 3280 ft.

FRIO COUNTY — Dr. F. Thompson's Trebble 1, sd 3555 ft.

GONZALES COUNTY—Antibus and Cummins' Martin 1, 8 mi from Gonzales) dr. Acme Oil and Royalty Co.'s Weber 1, sd around 2400 ft. Fitzsimmons and Perrinot et al's Huber 1, sd 3350 ft. Keiffer et al's B. B. Dix 1, total depth 2850 ft—no new rept. Lake and Thompson's Campbell 1, in Saturn area, mov on. Mouldon Oil Co. (Fennell and Elam) Robinson 2, dr 2785 ft; Borer 1, dr 1800 ft.

GOLIAD COUNTY—Humble's Lackey and Weldon 1, showed salt water at 3941-51 ft, elevation 380 ft, sd for orders at 4150 ft. Morgan, Zock et al's Pereira 1, blk 14, V. Ramos survey, dr 2200 ft.

GUADALUPE COUNTY — Cranfill and Reynolds Appling 2, swabbing at 2480 ft. Fowler et al's Blumberg 1, 1½ mi w McQueeney, sd 1050 ft. Grayburg Oil Co.'s Wells 2, 1425 ft se No. 1, prep to sp in. Margan Lewis et al's Link 1, 7 mi nw Seguin, dr. Mid-Kansas O&G Co.'s J. J. Waldrop 2, about 1000 ft se of No. 1, dk. Magnolia's A. J. Manford 1-A, 2 mi w of Penn pool, dr 2810 ft; Klein 2, dr 2590 ft; Appling 2, being completed. Palo Alto Oil Co.'s Denman 1, dk. Penn-Tex Oil Co.'s Roamel 1, J. Robinson survey, 1300 ft w of Roamel gusher, sp in. Sun Oil Co.'s J. C. Manford 2, direct e offset to No. 1, dr 2514 ft. Tidal Oil Co.'s Seligman 1, N. J. Williamson survey, dr.

KARNES COUNTY—Freeman et al's Wilburn 1, sp in. Louisiana Oil Ref. Co.'s Kleavemann 1, dr 1180 ft. Mach et al's Love 1, sp in.

KENDALL COUNTY—Borget et al's Willie Haag 1, set csg 750 ft. Dixon et al's Behr 1, 3 mi se Sisterdale, dr. Milwinkle et al's Kasten 1, lcn. Dickson and Morrison's Edmondson 1, dr 120 ft. Seaboard Oil Co.'s Askey 1, 3 mi n Sisterdale, csg set 1000 ft. Sinton Oil Co.'s Garvin 1, set csg at 450 ft. Perkins et al's Lawhorn 1, mov on.

KINNEY COUNTY—Blume et al's Herbst 2, dr 1100 ft. Magnolia's Wardlow 1, Blaez survey, dr 590 ft.

LAVACA COUNTY — McElreath and Suggests' Heinson 1, dr 3750 ft.

LIVE OAK COUNTY—Houston Oil Co.'s Booth 1, dr 2750 ft; Cartwright 22, lcn. Dougherty et al's Fee 1, 2254 ft nwl, 750 ft swl M. Borden survey, dr 100 ft.

MAVERICK COUNTY—Rycade Oil Co.'s

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HAMMERS-AXES-HATCHETS
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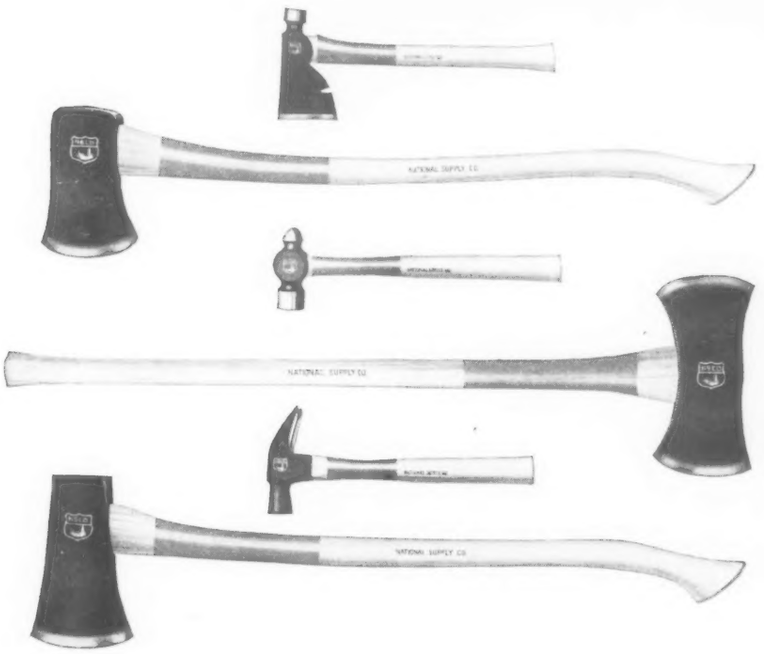

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THESE TOOLS ARE EASILY IDENTIFIED BY THE BLUE BAND ON THE HANDLES; AND AS A FURTHER GUARANTEE OF QUALITY, THE PLUMB AND NATIONAL SUPPLY TRADE MARKS ARE STAMPED ON EVERY TOOL.

THE NATIONAL SUPPLY COMPANIES

Chittim 5, reaming 3440 ft; Sullivan 5, dr 4449 ft; Chittim 6, sd.

MEDINA COUNTY—Donaldson Oil Co.'s Adams 2, dr below 100 ft. National Oil Co.'s Howard 1, spd in. Pearson Oil Co.'s Irrigation 5, prod. 1,000,000 cubic ft gas at 700 ft; Irrigation farms 6, dk; White Sides 1, lcn. Pat Armstrong's Crawford 1, dr about 450 ft; Butts 1, dr. TNT Drlg. Co.'s Haas 1, dr 1000 ft. Pan American Pet. Co.'s Hart 1, dr 1140 ft. Pure Oil Co.'s Fohn 1, sd. Sunflower Oil Corp.'s Morfield 1, sec 532, J. Brothax survey, 10 mi s of Hondo, ru.

SAN PATRICIO COUNTY—Geo. Pickett's J. C. Baldwin 1, 9½ mi e Sinton, dr 2110 ft. LaFeria O&G Co.'s C. C. Smith 1, dr 3015 ft.

STARR COUNTY—Daniels & Hill's (Smith-Adams) Welch 1, mov on tools prep to resume dr. Texas Co.'s Guerra 1-B, set csg at 3511 ft.

UVALDE COUNTY—Welch et al's Edmonds 1, sw Uvalde, sd 1000 ft; Benson 1, nw Uvalde, dr 1350 ft. Phantom Oil Co.'s Claudt 1, New Mantell, dr 1876 ft.

VAL VERDE COUNTY—Phantom Oil Co.'s Ingram 1, fsh 3050 ft. Lion Oil Co.'s McFadden 1, dr 1460 ft. A. T. T. E. Drlg. Co.'s West 1, ru.

WEBB COUNTY—Claggett & Evans' Webster 1, dr 500 ft. Houston Oil Co.'s Benavides 2-D, dr; Rosa Benavides 1-A, set 2344 ft, standing 1000 ft oil in hole; Rosa Benavides 2-A, loc. French Oil Co.'s Rosa Benavides 1, dr. O. W. Killam's Bruni 18, sec 9, dr 4035 ft; Bruni 12, blk 22, Albercas grant dr 3100 ft. W. E. May's Benavides 1, sec 22, dr 800 ft. South Texas Prod. Co.'s Benavides 1, Fansler lease, dr 2500 ft.

ZAPATA COUNTY — Alamo Drilling and Leasing Co.'s Trevino 3, dk. Chas Alworth, sec 149, s of gasser in sec 285, loc; Garza 1, sec 3, set csg 1218 ft. Blankenship et al's Garza 2, dr; Montemayor 2, 500 ft of oil in hole csg set at 1303 ft, pump being installed. W. R. Duke's Martinez 2, plugged at 973 ft. Humble's Soldadito 1, 24 mi so. Zapata, drilled plugs at 3400 ft, now dr 3400 ft in rock. O. W. Killam's Cuellar 16-C, prod 24 bbls at 1534 ft; Cuellar 23, dr 2300 ft; Cuellar 22, prod 300 bbls at 1543 ft; Cuellar 17-B, loc; Cuellar 18-C ru; Cuellar 24, loc; Cuellar 25 ru. Magnolia's Cuellar 3, sec 245 dr 4314 ft. Livingston and Twiss's Trevino 1, blk 7, sec 66, set csg 1254 ft. Muckleroy's Trevino 3, dr. Midwest Utilities' Garcia 1, in Pedernot grant, dr 1100 ft. B. F. Nixon's Guttirez 1, blk 8, lot 5, prep to sp in. Shankle's Cuellar 1, sec 65 of Escobas field testing, csg set 1246 ft. Trinity Drillers' Cuellar 1, sec 65 dk; Trevino 1, sec 66, set csg 1240 ft. Wicker et al's Garza 1, dk.

ZAVALLA COUNTY—Anglin Oil and Gas Co.'s Pryor 4, 11 mi sw of Uvalde, dr 450 ft; State's Pryor ranch 1, waiting on cement at 1100 ft, small gasser at 1103 ft. Cribbs and Davidson's Weathersby 1, dr 780 ft. Carl G. Cromwell's White Cotton 1, nw corner of ranch, dk. Copps et al's Pride 1, dr 1800 ft. Southern Crude Oil Co.'s Washer 1, dr below 4000 ft. Wiegand Bros.' Gates 1, near Loma Vista, sd at 2285 ft; good oil show. Texas Gas Fuel Co.'s West 7, dr 200 ft.

WEST TEXAS

Company, Well and Location		Initial Production Bbls.	Depth
ECTOR COUNTY—			
Gibson & Johnson, Scharbauer 1 ..		*	4012
PECOS COUNTY—			
Phillips Pet. Co., Shearer 1		*	1675
Rector Oil Co., Young 1		*	2418
Trees Oil Co., J. C. Trees 3		*	2321

ANDREWS COUNTY—Deep Rock Oil Co. et al's A. R. King 1, elev 3206 ft, top salt 1698 ft, dr with oil in hole at 4290-4305 ft; B. L. King 1, elev 3196 ft, top salt 1700 ft, dr 4176 ft; W. J. Mathis 1, elev 3192 ft, top salt 1730 ft, set 6⅝ cas 4100 ft, td 4109 ft. Fuhrman Pet. Corp.'s Ford 1, elev 3186 ft, dr salt 1720 ft. Humble O&R Co. & Penn Oil Co.'s Wilson 1, ur 1010 ft. Newton Maer & Staniforth's Meadors 2, lcn.

BREWSTER COUNTY—E. L. Chapman et al's Skinner 2, elev 4240 ft, sd 1280 ft. Trans-Pecos O&G Co.'s Jones 1, elev 3073 ft, co 2290 ft.

COCHRAN COUNTY—R. A. Westbrook & Co.'s Slaughter 1, elev 3793 ft, top salt 2347 ft, top lime 3837 ft, dr 5400 ft.

COKE COUNTY—Arkansas Fuel Oil Co. & Dixie Oil Co.'s Stepp 1, dr 1975 ft. Lipan Oil Co. & Vernon O&G Co.'s Lackey-Rawlings 1, sd 3500 ft.

CONCHO COUNTY—Beasley et al's Sam Waring 1, machine. A. W. Turner et al's Brosig 1, set cas 780 ft.

CRANE COUNTY—Cranfill Bros. Oil Co. & Gulf Prod. Co.'s Tubbs 1, elev 2526 ft, top salt 505 ft, top brown lime 2445 ft, dr 2555 ft. C. C. Duffy et al's Cowden 1, (Sec. 31) dr 200 ft.

CROCKETT COUNTY—W. E. Dolman & E. H. Moore's Perner 1, rig. Magnolia Pet. Co.'s Hoover 1, elev 2412 ft, top salt 660 ft, top lime 1890 ft, dr dark shale 3675 ft. Trans-Texas Oil Co.'s Shannon 2, elev 2647 ft, top salt 1095 ft, dr 2525 ft. Gordon Schaul et al's Barnscorew 1, lcn.

CULBERSON COUNTY — Grisham-Hunter Corp.'s Garren 1, sd 2500 ft. Hickey et al's Finley 1, re-set 3-inch cas 2907 ft. W. L. Kornrumpf et al's Garren 1, dr 240 ft.

ECTOR COUNTY — C. P. Davis et al's Hendrick 1, elev 2878 ft, top salt 1640 ft, dr 2930 ft. Penn Oil Co. & Devonian Oil Co.'s Goodman 1, rig. Southern Crude Oil Pur. Co.'s Cowden 1, rig. TP Coal & Oil Co.'s McKenzie 1, elev 2933 ft, top salt 1009 ft, top lime 3265 ft, co with 1700 ft oil in hole after shot 210 qts at 3720-75 ft, td 3863 ft. Tidal Oil Co. & Independent O&G Co.'s Eidson-Scharbauer 1, elev 2929 ft, top salt 1020 ft, top lime 3150 ft, co with 500 ft oil in hole after shot 240 qts at 3670-3755 ft, td 3800 ft.

EDWARDS COUNTY—Phillips Pet. Co.'s Holman 2, dr 3420 ft.

EL PASO COUNTY—Lane-Texas Co.'s W. D. Malone 1, sd 1725 ft.

FISHER COUNTY—Cranfill-Reynolds Co.'s Barrett 2, rig; Willingham 2, dr 2810 ft. Midwest Explo. Co.'s Decker 1, lcn. Roeser-Pendleton, Inc.'s, Steele 1, rig. The Texas Co.'s Teagarden 1, lcn.

GAINES COUNTY — Humble O&R Co.'s Carswell 1, dr 1200 ft.

GARZA COUNTY — H. C. Cate et al's Stoker 1-A, dr 200 ft.

GLASSCOCK COUNTY — California Co.'s Jones 1, cem cas 2058 ft. FHE Oil Co.'s Sprinkle 1, dr 1400 ft. Ed. Timberlake-Marcus Snyder et al's Meek 1, elev 2575 ft,top lime 2670 ft, testing oil pay 2977-80 ft. World Oil Co.'s Edwards 1, elev 2538 ft, ur cas 750 ft; McDowell 3-C, elev 2537 ft, lcn.

TOM GREEN COUNTY — Ellis et al's Lewis 3, sd 485 ft. Phillips Pet. Co. et al's Jennings 1, dr 2410 ft. D. W. Wiley et al's Mayer 1, sd 632 ft.

HOWARD COUNTY—Meriwether Oil Co.'s Eva Smith 1, elev 2590 ft, sd 2540 ft. Owen-Sloan Oil Co. et al's Flowers 1, ur cas 2517 ft. Sinclair O&G Co.'s Montgomery 1, dr 1750 ft.

HUDSPETH COUNTY — California Co.'s University 1, elev 5109 ft, dr sand 4615 ft.

IRION COUNTY — Carl Cromwell et al's Nutt 2, swab and flow 100 bbls oil 9 hrs at 1441-51 ft. P. I. Fox & Thorsen's Tankersley 3, dr 525 ft. Kingwood Oil Co. et al's Sugg 1, elev 2334 ft, pb from 7818 to 6800 ft and shot five times, sd. Straughn & Texannati Oil Co.'s Nutt 1, dr 660 ft; Nutt 2, machine. Pete H. Williams' Ashe 1, sd in hot salt water 8900 ft.

JONES COUNTY — Mid-Tex O&G Co.'s King 1, testing on pump, td 1976 ft. Phillips Pet. Co.'s Teoff 1, dr 1725 ft.

LOVING COUNTY—California Co.'s Reagan-McIlvain 1, elev 2725 ft, top salt 771 ft, cem cas 4112 ft. Dixie Oil Co. & Phillips Pet. Co.'s W. D. Johnson 1, dr 810 ft. Hadlock et al's Russell 2-A, rig. L. E. Lockhart et al's Wheat-Ramsey 1, elev 2689 ft, top salt 725 ft, cem cas 4065 ft. Lockhart & Co.'s Bowen-Wells 3, elev 2719 ft, top salt 763 ft, sd 3385 ft; Hubbard 6, rig; Lepp 2, spd and sd. Miller-Burge-Healey's Chapman 1, rig. Joe Rush et al's Jim Wheat 1, rig.

MENARD COUNTY—L. G. Priest et al's J. P. Sorrells 1, dr 1750 ft.

MIDLAND COUNTY—Pure Oil Co.'s J. E. Hutt 1-A, dr 1735 ft.

PECOS COUNTY—Alexander-Lyles et al's University 1, abn 1855 ft. California Co.'s Iowa-Jasper 1, elev 2433 ft, top salt 1205 ft, sd showing oil with 7 million ft gas, td 1565 ft. E. L. Chapman et al's Streety 1, elev 2653 ft, sd 2200 ft. Cromwell-Tanner & Ellis' University 1, elev 2485 ft, top salt 955 ft, set cas 1985 ft. Crosby Prod. & Roy. Co.'s Cordova 1, elev 2320 ft, top salt 725 ft, sd 2080 ft. Fisher & Lowrie's Webb 1, trace oil 1435-45 ft, dr 1500 ft. Humble O&R Co.'s H. L. Kokernot 1, dr 210 ft. Hussman Oil Co.'s Estes 1, fsh 1675 ft. Independent O&G Co. & Buell-Hagan's Jasper 1, sd making 7¾ million ft gas and 10 bbls oil daily, pay 1518-85 ft. C. S. Messinger et al's Byrne 1, dr 1310 ft; Byrne 2, lcn. J. R. Miller et al's Bennett 1, sp and sd. J. D. O'Mara et al's Bennett 1, fsh tools with oil in hole at 1089-1160 ft. Oregon Oil Corp.'s Yates 2, machine. Perren et al's Eaton 2, sd 920 ft. R. W. Porpus et al's State 1, sp and sd. Riser & White's W. D. Riser 1, lcn. Sides & Cloyd's Blackstone-Slaughter 1, top salt 860 ft, dr 1865 ft. Texas Co.'s Wright 1, top salt 1940 ft, dr brown lime 2955 ft. Transcontinental Oil Co.'s University 1, elev 2552 ft, top lime 1035 ft, bad hole 4910 ft. Transcontinental & Arkansas Fuel Oil Co.'s White-Baker 3, pb from water at 1948-98 ft to test oil in hole at 1900-15 ft; M. Sellman 1-A, dr 1870 ft. W. F. Walsh et al's Henderson 1, elev 3325 ft, fsh 1640 ft. Walsh-Sturm & Keller's Shearer 1, machine. Monte Warner et al's R. D. Webb 1, lcn.

REAGAN COUNTY—Big Lake Oil Co.'s University 179, cem cave 2920 ft; University 1-C, fsh drill stem and core barrel, td 8658 ft; University 2-C, flow 525 bbls oil and 12,094,000 ft gas, td 8232 ft; University 3-C, flow 94 bbls oil and 2,218,000 ft gas at 8576 ft; University 4-C, flow 112 bbls oil and 4,699,000 ft gas, td 8220 ft. Group One Oil Corp.'s University 2-B, coring sandy-lime and shale 8435 ft; University 3-B, dr shale 7899 ft. Kemrow Co.'s Sawyer 1, dr 400 ft. Westyde Inv. Co.'s J. H. Scott 1, lcn.

REEVES COUNTY—California Co.'s Kloh 1, dr water sand 895 ft. Slack & Fink's Brooks-Huling 1, elev 3116 ft, sd showing oil and gas, td 1860 ft.

RUNNELS COUNTY—Geo. W. Boyce & Lamar's Lange 1, elev 1844 ft, sd 2504 ft. Gibson & Johnson's Johnson 1, sd 2415 ft.

SCHLEICHER COUNTY—Delmar Oil Co.'s O'Harrow 1, ur 3330 ft. Phillips Pet. Co.'s J. A. Whitten 1, elev 2333 ft, set 5 3/16 cas to test show gas 6295-6303 ft. Munger-Wilson Oil Co.'s Page 1, elev 2270 ft, cem cave 4750 ft. Paul Teas & Gant's Allison 1, sd 1035 ft. J. D. Wesner et al's Ratliff 1, lcn.

SCURRY COUNTY—J. G. Armand & Camp Springs O&R Co.'s Quinn 1-A, elev 2316 ft, dr 4240 ft. Byrd & Harmon's Murphy 1, dr 2615 ft. Pender O&G Co.'s Davis 1, show gas 4365-70 ft, fsh tools 4400 ft. Transcontinental Oil Co. & Vacuum Oil Co.'s Peckham 1, elev 2155 ft, co 980 ft.

TAYLOR COUNTY — Condor Pet. Co.'s Stoker 1, dr 2780 ft. Eastland Oil Co. & J. B. Dunigan's Teaff 1, rig. A. H. Gibson et al's Cody 1, pb from 2467 to 2396 ft and shot, now co and swab 75 bbls oil. J. B. Jameson et al's Webb 1, elev 1905 ft, fsh bailer 5916 ft. H. B. Herring-Hucony Gas Co. & Cordova Union's Richie 1, dr 710 ft. Owen-Sloan Oil Co. & Gibson-Johnson's Bingham 1, dr 2265 ft. Mid-Continent Pet. Corp.'s Lindsey 1, co with 300 ft oil in hole 2375-78 ft.

TERRELL COUNTY—Big Bend Oil Corp. & F. A. Book's Bassett 1, elev 2396 ft, dr black shale 1870 ft. Transcontinental's Good 1, elev 2405 ft, cem cas, td 3290 ft.

TERRY COUNTY — Penn Oil Co.-Unit Plan's P. Carlisle 1, elev 3275 ft, top salt 2260 ft, sd 3322 ft.

VAL VERDE COUNTY — O. O. Owens' Mills 1, dr by junk, td 5757 ft. Phantom Oil Co.'s Ingram 1, fsh 3035 ft.

WARD COUNTY—E. J. Anderson et al's Boogher-Merritt 1, top salt 825 ft, co with 1500 ft oil in hole 2175-2228 ft. C. C. Dearborn & Otto Kirkham's Boogher 1, top salt 840 ft, dr 2090 ft. Gulf Prod. Co.'s Hutchings 4, dr 1035 ft; O'Brien 8, flow 147 bbls oil daily 2592-2610 ft; O'Brien 9, top salt 1205 ft, dr 1485 ft. R. F. Owen et al's Johnson 1, sd 380 ft. Sid Richardson et al's O'Brien 2, top salt 1150 ft, dr 2510 ft. Shipley Oil Corp.'s Monroe 1-A, dr 680 ft. J. E. Smith et al's Clements 1, top salt 745 ft, dr 1380 ft. Sturm & Paine's Cummins 1, elev 2443 ft, top salt 780 ft, sd 2350 ft. Sun Oil Co.'s Sealy 1, elev 2680 ft, sd 2590 ft. Tex-Oil Production Co.'s Redman 1-A, elev 2717 ft, top salt 1290 to 4133 ft, testing show oil and gas 5073 ft.

WINKLER COUNTY — Champion-Winkler Oil Corp.'s Campbell 1, showing oil and gas, sd 3735 ft. Simms Oil Co. et al's Geo. Sealy 1, rig.

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Port Arthur, Texas
Galveston, Texas

CENTRAL EAST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
FREESTONE COUNTY—		
C. F. Lytle et al, Holt 1	*	4940

ANDERSON COUNTY — Humble O&R Co.'s J. C. Collier 1, John Little sur, dr 3256 ft. Sun Oil Co.'s Bowers-Maier 2, E. G. Meyers sur, sp and sd. Sun-Humble-Navarro Oil Co.'s Allison Gardner 1, N. Salisar sur, dr 510 ft.

CAMP COUNTY—J. C. Rogers & Southern Pet. Explo. Co.'s L. Enfeldt 1, R. M. Montgomery sur, elev 410 ft, Pecan chalk 2490 to 2907 ft, sd 3045 ft.

DELTA COUNTY — Geo. Kean & J. B. Evans' C. Smith 1, J. B. Anderson sur, elev 506 ft, sd 2100 ft.

ELLIS COUNTY—G. C. Foster & S. C. Richardson's Moise-Cerf 1, LaPena sur, elev 440 ft, Austin chalk, 531 to 814 ft, dr 2010 ft.

FANNIN COUNTY—Ed. V. Parsons et al's Morgan 1, J. E. English sur, elev 668 ft, dr 2810 ft.

FRANKLIN COUNTY—Harper & Byers' A. J. Laws 1, D. G. Rogers sur, rig.

FREESTONE COUNTY—Haley & Young's Pierce-Worthy 1, J. L. Chavert sur, elev 481 ft, sp and sd. O. W. Killam et al's R. H. Edwards 1, A. Sanchez sur, elev 402 ft, dr 2700 ft.

HENDERSON COUNTY—H. B. Ashburn et al's T. E. Terry 1, Arron York sur, dr 2015 ft. E. L. Chapman et al's Cade 1, Simon Weiss sur, sd 3100 ft. Cranfill & Germany, Inc.'s, C. C. Starr 1, G. Acosta sur, lcn. Shell Pet. Corp.'s S. T. Stephens 1, I. D. Owen sur, elev 510 ft, Pecan chalk 2050 to 2129 ft, Austin chalk 2916 to 3115 ft, top Woodbine series 3164 ft, dr lime 3775 ft Geo. L. Pace et al's Sarah Anthony 1, J. M. Betram sur, dk.

HOPKINS COUNTY—Lew Wentz-Atlantic Oil Prod. Co. & Bob Penn's S. M. Milholland 1, J. H. Simpson sur, elev 525 ft, top Woodbine sand 3247 ft, dr 3550 ft.

KAUFFMAN COUNTY—Roy H. Sowell et al's Johnson 1, Wm. Driggers sur, elev 667 ft,

LAMAR COUNTY—B. L. Laubenheim et al's A. H. Ables 1, E. Ables sur, sd 482 ft. fsh 3090 ft.

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Report by
DONALD C. BARTON
Consulting Geologist and Geophysicist

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Torsion Balances

LIMESTONE COUNTY—Haley-Heemann' Wilkes 1, J. Breeding sur, elev 421 ft, sd 107 ft.

MORRIS COUNTY—Geo. McCamey et al's P. M. Staggers 1, G. Forbes sur, sp and sd.

RAINS COUNTY—D. H. Byrd & Owen Sloan Oil Co.'s J. D. Hill 1, F. McMahan sur, 2005 ft. Everett Morrison et al's J. Franklin 1, John Christian sur, dk.

RED RIVER COUNTY—E. L. Chapman et al's Morris-Guest 1, S. Lakin sur, sd 560 ft.

RUSK COUNTY—E. M. Joiner et al's Bradford 3, elev 390 ft, Pecan chalk 2590 to 2774 ft, dr 310 ft.

SMITH COUNTY—Dan Daniels-Adair & T. B. Slick's A. J. Poirer 1, David Wilson sur, elev 375 ft, dr 2975 ft. E. L. Chapman & Sutton's J. M. Hammon 1, Jas. Reid sur, elev 38[illegible] ft, Pecan chalk 2680 to 2912 ft, dr 3550 ft. Owen-Sloan Oil Co. & R. H. Davis' J. H. Starnes 1, J. W. Allen sur, elev 417 ft, sd 1353 ft. O. M. Rector et al's M. Dozier 1, M. Maise sur, lcn. Winona Oil Co.'s Morgan Freeman 1, A. J. LaGrone sur, sp and sd.

TITUS COUNTY—Deep Rock Oil Co. et al's First Nat'l Bank fee 1, H. W. Cobb sur, re-bldg dk. Wainwright-West Oils, Ltd., et al's Walcott-Lott 1, D. M. Smith sur, elev 280 ft, top Pecan chalk 2627 ft, dr 3630 ft.

VAN ZANDT COUNTY—Doc Cooper et al's W. H. Bundy 1, dk blown down. Cranfill-Reynolds Co.'s C. M. Alexander 1, J. Burleson sur, elev 395 ft, Pecan chalk 2695 to 2814 ft, sd 3410 ft; Coker-Ledbettter 2, machine. Warren T. Daniel et al's Fannie Cumby 1, John Wright sur, elev 457 ft, Pecan Gap chalk 1690 to 1730 ft, sd 2300 ft. Dennis Oil Corp.'s C. W. Morris 1, C. L. Morrison sur, elev 496 ft, coring 2720 ft. Grand Saline Oil Co.'s W. J. Carnes 1, S. P. Ry. sur, sd acct high water 1160 ft. Manley-Sprinkle & Evans' B. C. Andrews 1, M. Neal sur, elev 536 ft, sd 3005 ft. Hartt Pet. Co.'s L. H. Cox 1, A. C. Nugent sur, dk; B. F. Womble 1, P. Young sur, dk. Pandem Oil Corp.'s R. L. Brinn-Gibbard 1, Ray Sunigas sur, elev 391 ft, Pecan chalk 2850 to 2979 ft, sd 3045 ft. L. G. Priest et al's Blanche Blewett 1, E. Porter sur, rig. L. B. Pruitt et al's G. W. Carter (15.87-ac strip) 1, John Walling sur, dr 200 ft. Texas Chief Oil & Roy. Co.'s J. P. Foster 1, F. Montgomery sur, sp and sd. Vanco Oil Corp.'s Wages 1, rig. Van Zandt Oil & Dev. Co.'s Sharp-Robinson 1, J. B. Ybarbo sur, elev 372 ft, Pecan chalk 2764 ft, dr 4125 ft.

WOOD COUNTY—Big Indian Oil & Dev. Co. & Tidal Oil Co.'s R. J. King 1, Wm. Barnhill sur, elev 480 ft, top Pecan chalk 2636 ft, dr shale 3065 ft. Geo. L. Pace et al's B. G. Dickey 1, J. C. Clark sur, elev 458 ft, sd 2060 ft.

TEXAS GULF COAST

AUSTIN COUNTY—Jas. T. O'Hara et al's Batla 1, Wm. Smithers Survey, fsh 4000 ft. Black Oil Co.'s Lancashire 1, 3 mi s Sealey, dr 3300 ft shale. McInnerry et al's Hattie McDale 1, Jno. Martin Survey, sd 500 ft. Empire's J. T. Boyd 1, San Felipe, abn at 4110 ft in anhydrite.

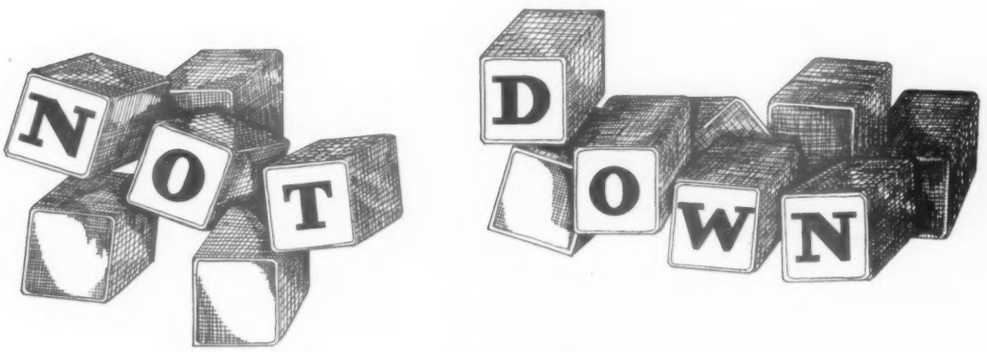
BRAZORIA COUNTY—Thos. Faust et al's Fee 6, 2 mi s Nash Dome, set cas at 4083 ft. Shell's Blakely-Winston 1, 2 mi ne Danbury, will test at 1575-1667 ft after plugging back; No. 2 lcn. Rycade-Amerada's Rapid City 1, 2 mi s Danbury, dr 4600 ft shale. Rucks & Patterson's Hunter 1, sw Hoskins Mound, sd 1180 ft. The Texas Co.'s O. F. Ewing 1, 1½ mi n Manvel, dr 4848 ft sticky shale. Mills-Bennett's E. Randon 1, Allen Dome, dr 4930 ft sandy shale. United Oil Synd.'s Mores 1, 3 mi n Danbury, dr 550 ft gbo.

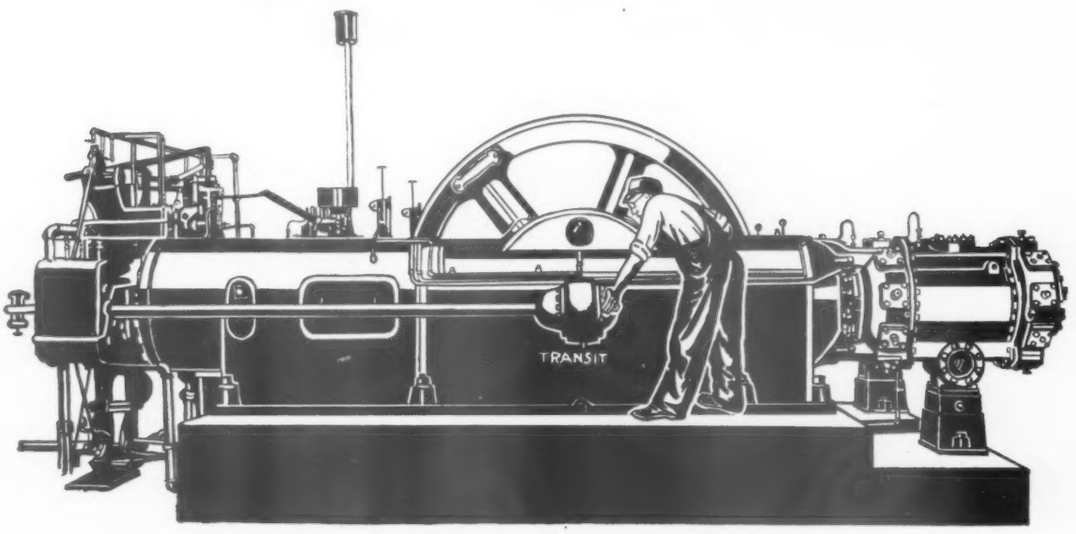
CHAMBERS COUNTY—Pure's Mayes 11, Lost Lake, woc 2704 ft. Pure's Kirby 1, Cove, dr 3100 ft shale and lime. Pure-Rycade's Jackson 1, 6 mi w High Island, set surface cas at 85 ft. Shell's Herff 1, Moss Bluff, dr 4602 ft hard sand and lime. Superior Oil Co.'s H. Jackson 1, sd 3504 ft. Chicago Oil Corp.'s Lawrence 1, 10 mi s Barbers Hill, dr 3810 ft sandy shale.

FORT BEND COUNTY—Gulf's Brazos Valley Irrig. Co. 2, 3 mi sw Clodine, dr 3750 ft shale and lime. Gulf's Moore 21, Moores Field, dr 3995 ft sand, oil show; Moore 22 dr 3775 ft sticky shale. Pure's Jackson Brown 1, near Pilant Lake, abn 4510 ft shale.

GRIMES COUNTY — Jno. Deering et al's Rossi 1, 3 mi n Singleton, dr 2387 ft shale.

HARRIS COUNTY—Humble's Simms-Smith 77, Goose Creek, washing down, bottom of hole 6642 ft. Humble's Warren 7, Hockley, dr 5699





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ft shale. Humble's Minnetex 2, Mykawa, sd 1216 ft; Siadous 1, Mykawa, dr 5218 ft hard sand. Mrs. J. C. Baldwin's Kitzman 1, 2 mi n Cypress, sd 4247 ft. Martin, Drake & Jones' Haney 1, 3 mi e Elena, dr 5273 ft sticky shale. Sloane Prospecting Co.'s Davis 1, 5 mi nw Barbers Hill, lcn. Cranfill-Reynolds Co.'s Rodrick 1, 6 mi s Cypress, dr 2410 ft gbo. Strang Pet. Corp.'s Good 1, Deer Park, dr 3240 ft gbo. Rich et al's Highland Farms 1, Elena, stdg. 100 ft.

JACKSON COUNTY — The Texas Co.'s Mitchell 1, 12 mi s Edna, dr 2493 ft gbo.

JEFFERSON COUNTY—Westbury Oil Co.'s West 1, S. Choate Sur, sd 3090 ft. Gulf's Burrell 5, Fannett, dr 5410 ft shale. The Texas Co. & Houston Oil Co's Fitzhugh 1, Big Hill, sdtr 5144-64 ft.

LIBERTY COUNTY—Gulf's W.H.P. McFadden 1, Moss Bluff, dr 3925 ft shale and lime. Humble's Sabine Tram 1, Devers, dr 2023 ft sandy shale. The Texas Co.'s Fee 1, N. Dayton, r 4940 ft. Houtex Prod. Co.'s Brown-Tadlock 1, N. Dayton, tested salt water 5097 ft, now dr 5278 ft sandy shale; Deering-Wilhite 1, N. Dayton, dr 4380 ft sand and shale. Victor Oil Co.'s Gulf Fee 1, N. Dayton, will dd from 4466 ft after testing salt water; Gulf Fee 2 dr 4780 ft water sand. Tucker et al's Bell 1, Devers, dk.

MATAGORDA COUNTY—Cockburn et al's Hawkins 1, Shepherds Mott, dr 5493 ft sticky shale. Watts Oil Co.'s Titus 1, south of Collegeport, dk.

MONTGOMERY COUNTY—Kelly Baker's Juergus 1, 3 mi Conroe, sd 1910 ft.

ORANGE COUNTY—Gulf's W. H. Stark 1, Port Neches, dr 2273 ft gbo and lime. The Texas Co.'s Kuhn 2, Port Neches, dr 2992 ft no show; Stark 2 dr 3628 ft shale, no show.

VICTORIA COUNTY—Humble's J. J. Welder 1, 3 mi se Nursery, 6474 ft deep.

WALKER COUNTY—Joyce Richardson et al's Smither 1, 12 mi n Huntsville, sd 3455 ft.

WALLER COUNTY—Kirby Pet. Co.'s Davis 2, San Felipe, dr 3055 ft sandy lime,

WASHINGTON COUNTY—Mid-Kansas O-&G Co.'s Johnke 1, nw pt county, dr 1450 ft shale.

EAST TEXAS

BOWIE COUNTY—Lee Timberlake's Tidwell 1, Jos. Eskell sur, dk.

HARRISON COUNTY — Shell Rock Pet. Co.'s Daugherty 1, W. W. Burris sur, dr shale 3227 ft.

MARION COUNTY—A. A. Trammell, Tr.'s Hussey 1, Lockhart sur, dk. H. L. Hunt's Chatten 1, Grayson sur, topped chalk 1960 ft, set 65g-in cas 2467 ft, ta 3415 ft.

MORRIS COUNTY—Tucker & Fullwood's Stagger Est 1, Nelson sur, set 10-in cas 42 ft.

RED RIVER COUNTY—E. L. Chapman's Norris & Guest 1, Karkin sur, sp wo. D. M. Buffington's Hoosier 1, Hughart sur, sd 2363 ft. Shad Harper's Garland 1, Wagley sur, sd 1862 ft. Johnson Pet. Co.'s Randolph 2, Dean sur, sd 2192 ft.

SHELBY COUNTY—Chapparral Oil Co.'s Holt 2, Matthew Moore sur, sd 3300 ft. Benedum & Trees' McCann 1, Nancy Beattie sur, set 9-in cas 2762 ft, r to bail 4132 ft.

TITUS COUNTY—Canadian Oil Co.'s Walcot 1, D. N. Smith sur, topped lime 2618 ft, dr 3615 ft. Deep Rock Oil Co.'s First National Bank 1, Henry Culp sur, sp, set 10-in cas 101 ft, dr 540 ft.

SOUTH LOUISIANA

ACADIA PARISH — Yount-Lee Oil Co.'s Houssiere-Latrielle 8, Evangeline, dr hard sand and shale at 7208 ft. The Texas Co.'s Rayne Hrs. 5, Evangeline, fsh for core bbl. at 8144 ft. Calcasieu Oil Co. et al's Hayes 1, 3 mi nw Iota, sd 6629 ft.

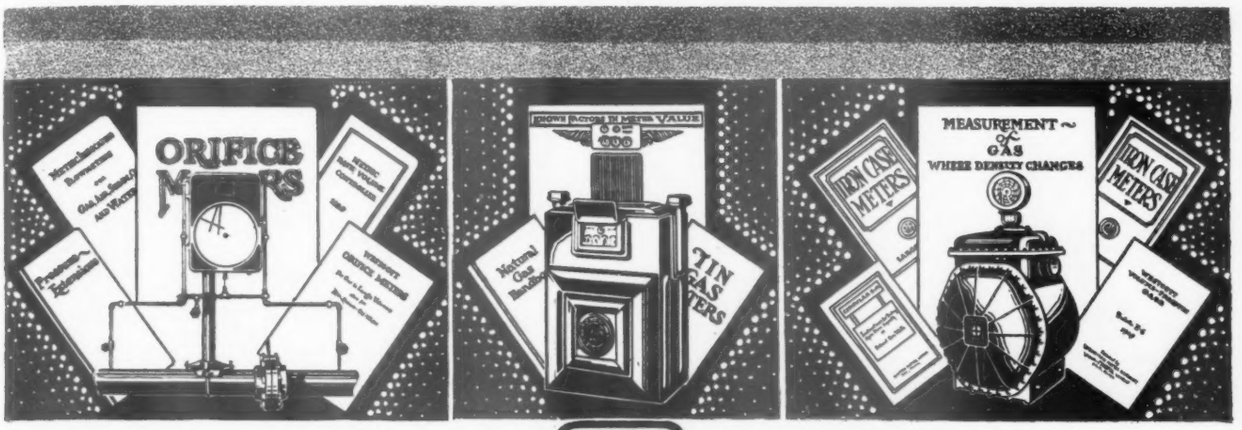
AVOYELLES PARISH — R. A. Tippett's Chatalon 1, Sec. 5-1n-3e, dr 2305 ft shale.

CALCASIEU PARISH—Adams Oil Co.'s Roderick 1, Starks, dr 1100 ft gbo. Shell's Heyd 1, 2 mi nw Iowa, dk. Pure's Yount-Lee 9, Sweet Lake, dr 5250 ft lime and sand.

CAMERON PARISH—Vacuum's Cameron Meadows 1, washing over stuck dr stem at 3800 ft. Calcasieu Oil Co.'s Caldwell 5, E. Hackberry, dr 6750 ft sand and lime; Watkins 18, flowing 75 bbls daily, 21.7 gravity oil, at 2751 ft. The Texas Co.'s State-E. Hackberry 7, lcn.

IBERIA PARISH—The Texas Co.'s State Vermilion Bay 5, bldg. foundation.

IBERVILLE PARISH—Shell's Wilbert 4,



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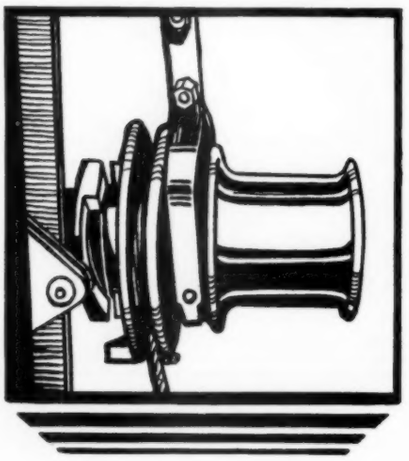

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White Castle, woc 5175 ft. Standard's Schwing 4, Bayou Blue, abn at 2088 ft, tested salt water; Wilbert 5, moving in; Wilbert 6, plugged back; Cyrus Case 1, washing around stuck dr stem at 3196 ft.

JEFFERSON PARISH—Humble's Delaware Fur Co. 1, Sec. 2-16s-23e, driving piling.

JEFFERSON DAVIS PARISH—Yount-Lee Oil Co.'s Geo. Courtney 1, Welsh, dr 3200 ft gbo; Abbott 1, Welsh, dr 3008 ft hard sand. Pure's Day 1, 1½ mi sw Welsh, abn at 5216 ft, hard sandy shale.

LA FOURCHE PARISH—The Texas Co.'s LLE-Leesville 1, Sec. 27-21s-22e, dr 2759 ft lime and shale.

PLAQUEMINES PARISH—Humble's Cockrell-Moran 2, Lake Grande Ecaille, lcn; Lake Washington 1, Lake Grande Ecaille, sandy shale, oil show, 5115 ft, will set cas at 5098 ft. The Texas Co.'s Garden Island Bay State 4, dr 700 ft water sand.

ST. LANDRY PARISH — Elbof Exploration's Valmont Ledoux 1, Eunice, abn at 4362 ft. The Texas Co.'s Botany Bay Fee 7, Port Barre, dr 3340 ft sand. Gulf's W. H. Hoskins 2-A, Port Barre, cap rock at 3829 ft; Lahaye 2, dr 500 ft. Hebert-Baker Oil Co.'s Fisher 1, Sec. 10-3s-4e, dr 4210 ft hard sand. Alex Rice, Tr., Futral 1, 20-6s-5e, dr 1250 ft sand; Nos. 2 and 3 lcns.

ST. MARTIN PARISH—The Texas Co.'s St. Martin Ld. Co. 3, Hager dome, ru.

ST. MARY PARISH — Pure's Wax Lake State 2, dr 2620 ft gbo.

TERREBONE PARISH—Freeport Sulphur Co.'s Nelson 1, 12-21s-12e, dr 2675 ft gbo. The Texas Co.'s LLE-Bay Junop 1, dr 2384 ft, packed sand; Caillou Island State 3, driving piling; No. 4, lcn; Lake Pelto B-2, dr 2084 ft water sand; Bay St. Elaine 4, dr 5194 ft sand, oil show; Lake Barre State 4, waiting on rig; No. 5, lcn; No. 6, lcn; Dog Lake State 2-A, dr 2850 ft gbo.

WEST FELICIANA PARISH — Putnam Synd.'s Como Plantation 1, 54-1s-4w, dr 3195 ft shale.

NORTH LOUISIANA

Completions

Company, Well and Location	Initial Production Bbls.	Depth
BOSSIER PARISH (Cartersville)—		
Arkansas Fuel Oil Co., Kilgore A-3, 30-23-11	15	3135
Tippett et al, Holmes 2, 36-23-12	400	3170
SABINE PARISH (Zwolle)—		
F. M. Hood, Winston 1, 31-8-12	40	2515
Jones & Johnson, Pearson 1, 31-8-12	35	2318
Benedum & Trees (Loring Oil Co.), Bowman-Hicks 7, 4-7-12	10	2700
R. L. Gay, Trustee, Bowman-Hicks 7, 14-7-14	90	2575
WEST CARROLL PARISH—		
Palmer Corp., Marston A-1, 11-19-10e	*	2800

BIENVILLE PARISH—W. A. Nichols' McDermott 1, 22-18-8w, sd 2130 ft.

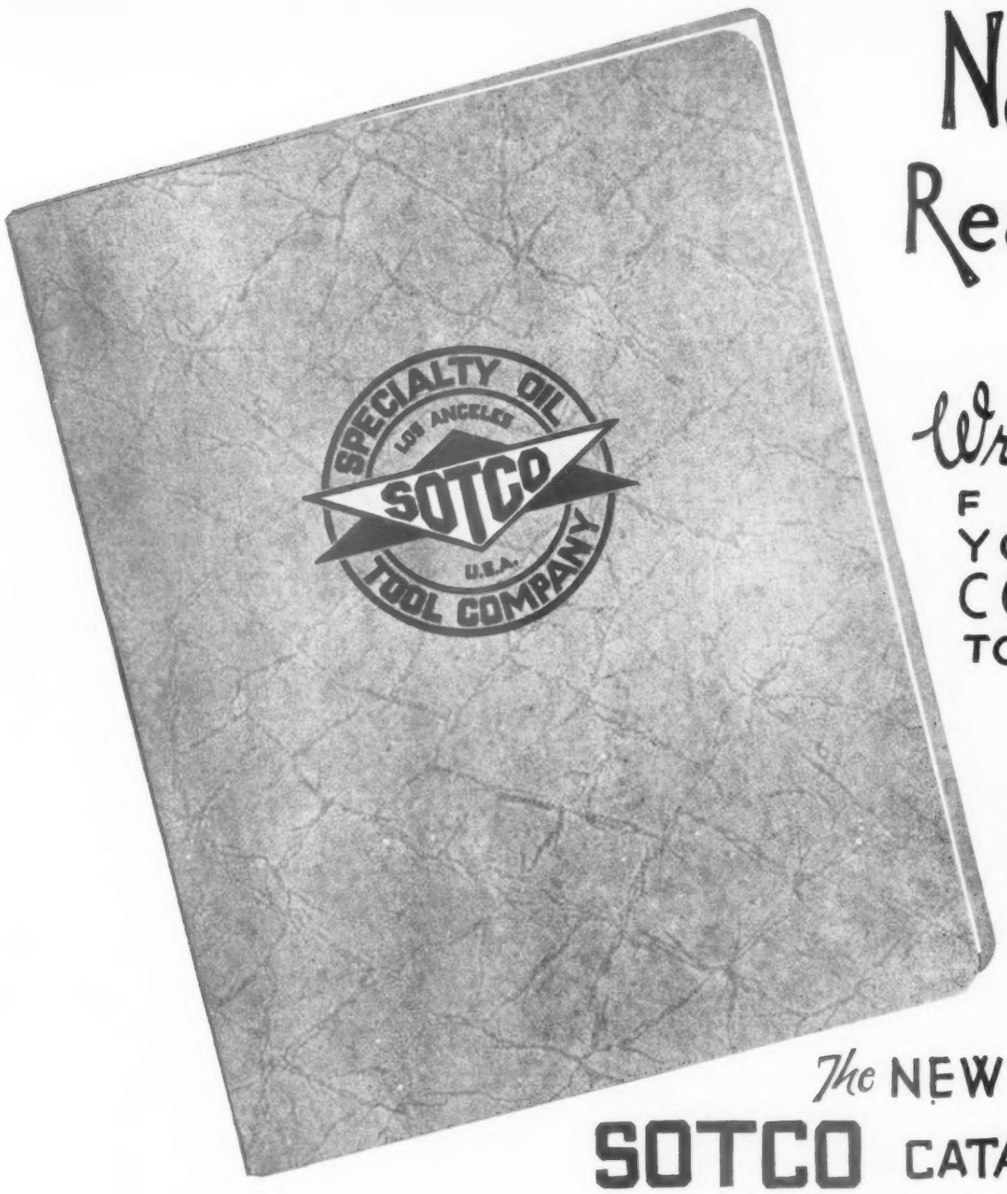
CADDO PARISH—Triangle Drilling Co.'s Hardy 1, 18-19-16, set 8-inch cas 1726 ft, set 6-inch cas 2090 ft, trying shut off sw, td 2300 ft. C. W. Robinson's Wilson 1, 2-15-16, fsh ds 3100 ft. I. N. Pharris' Oden 1, 18-19-14, sd wo, td 2409 ft. D. C. R. Oil Co.'s Oden 1, dr 2600 ft. R. W. Norton's Hill 1, 33-23-16, dr 4797 ft. Magnolia Pet. Co.'s Swann & Davis 1, 16-21-14, set 6⅝ cas 1535 ft, dr sandy shale 1763 ft. L. B. Mawk's Swann Bros. 1, 23-21-14, sd for fuel 700 ft.

CATAHOULA PARISH — National O&G Co.'s Kirkland 1, 35-9-6e, sp set 10-inch cas 163 ft.

CLAIBORNE PARISH — Triangle Drilling Co.'s Caskey 2, 6-19-5w, set 12½-inch cas 611 ft, dr 1100 ft. El Dorado Chief Oil Co.'s Simmons 1, 27-20-7w, sd in bldrs and shale, 2240 ft. Leue Oil Co.'s Taylor 1, 16-22-6w, sd wo 2864 ft.

CONCORDIA PARISH—Joe Marr et al's Maxwell 1, 33-3-8e, dr 2790 ft. A. C. Glassell's Pittsfield Plantation 1, 41-8-10e, dr 300 ft.

DE SOTO PARISH — Benson O&G Co.'s Harris 1, 6-10-13, set 6⅝ cas 3070 ft, sd wo 3650 ft. R. O. Roy's Farmer B-1, 8-13-13, dr



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1500 ft; Lse. 1, 33-14-13, topped Nacatosh 1235 ft, set 6⅝ cas 2732 ft; R. A. Nelson 1, 36-15-13, rig up; Parker Bros. 1, 5-13-13, set 6⅝ cas 2720 ft, tested 5 mil ft gas thru ds 2720 to 2850 ft; Parker A-1, 5-13-13, sp set 10-inch cas 223 ft, dr 400 ft; Whittaker A-1, 5-13-13, set 6⅝ cas 2729 ft; Brooks 1, 8-13-13, dk; Fuller & Canard 1, 6-13-13, lcn; McGee 1, 8-13-13, lcn; Tracy 2, 5-13-13, dk; Mattie Fuller 1, 5-13-13, sp set 10-inch cas 102 ft; Farmer D-1, 32-14-13, dk pat; H. B. Sample 1, 7-13-13, dk; Jesse Fuller 2, 6-13-13, rig up (all tests of Roy just bought by Standard Oil Co. of La.). H. L. Hunt's Furman 1, 5-14-13, rig up. O'Dell & Lawton's Harris 1, 11-13-14, co to bottom, wo, td 3140 ft. Ark. Fuel Oil Co.'s C. B. Scott 2, 32-14-13, rig up. Frank Melat, Inc.'s, Schuyver 1, 35-14-13, set 10-inch cas 141 ft, dr 450 ft.

FRANKLIN PARISH — Evansville Inv. Co.'s Welsh 1, 2-14-8e, sd 4200 ft. Davis et al's Moore 1, 12-11-6e, sd 1430 ft.

JACKSON PARISH—El Dorado Chief Oil Co.'s Southern Adv. Paper Co. 1, 35-15-4w, dk.

LINCOLN PARISH—Ark. Fuel Oil Co.'s Lewis & Co. 1, 26-20-4w, lcn.

NATCHITOCHES PARISH — S. D. McDaniels' Clark-Morese 1, 23-5-6w, sd 2436 ft. Robeline O&G Co.'s Winn 1, 7-8-9w, sd in rock 1635 ft. W. M. Coats' Collins 1, 28-9-10, set 12½-inch cas 121 ft.

RAPIDES PARISH—Ayers Bros.' Wicklipp 1, 9-5n-2w, sd 2650 ft.

RICHLAND PARISH—Austin & McDonald's Millsaps 2, 17-17-6e, sd 2697 ft; Millsaps 3, 16-17-6e, sd 2477 ft; Millsaps 4, 16-17-6e, lcn; Millsaps 5, 8-17-6e, dk; Hunt 1, 13-17-5e, dk. W. C. Feazel's Landrum 1, 6-16-7e, dk. International Gas Prod. Co.'s La Grone 1, 7-16-7e, lcn.

RED RIVER PARISH — W. D. Ball's Krumbholdz 1, 32-14-10, set 6⅝ cas 1680 ft, tested sw, wo 1701 ft.

SABINE PARISH—McDaniel et al's Batson 1, 16-8-12, dr 2200 ft. Benedum & Trees' (Loring Oil Co.) Bowman-Hicks 4, 34-8-12, set 6⅝ cas 2340 ft, td 2365 ft, arr dr in; Bowman-Hicks 5, 34-8-12, hit base chalk 2825 ft, dr 3522 ft; Bowman-Hicks 7, 4-7-12, pumping 10 bbls oil day td 2700 ft; Bowman-Hicks 8, 18-7-13, dk; Bowman-Hicks 9, 34-8-12, setting 6⅝ cas 2375 ft; Peavy-Wilson 1, 21-6-13, dr 1800 ft. R. L. Gay, Tr.'s, Bowman-Hicks 7, 14-7-14, set 6-inch cas 2090 ft, pumping 90 bbls oil, td 2575 ft; Bowman-Hicks 8, 18-7-13, dr 1490 ft; Sabine 4, 13-7-14, bailing to test, td 2501 ft. A. H. Tarver et al's Sabine State Bank 2, 26-8-12, dr 1100 ft. Olsen Bros.' Hooker 1, 27-8-12, topped chalk 2357 ft, set 6⅝ cas 2333 ft, flowing by heads into tanks, wo gauge, td 2625 ft; Ferguson 1, 33-8-12, sp set 10-inch cas 100 ft, dr 700 ft. Ohio Oil Co.'s Bowman-Hicks 3, 33-8-12, set 6⅝ cas 2400 ft, coring 2744 ft; Bowman-Hicks 1, Acct, 2, 6-7-13, topped marl 2062 ft, set 6-inch cas 2070 ft, bailed dry 2450 ft, arr deepen; Bowman-Hicks 5, 33-8-12, lcn. W. G. Gray's Nulton 1, 6-7-12, set 6⅝ cas 2197 ft, topped Blossom 2823 ft, cored 8 ft chalk showing light oil 3657-65 ft, set 4½ inch cas 3657 ft, tested drt at 3665 ft, arr deepen. Ruston Drilling Co.'s Bowman-Hicks 1, 4-7-12, TA 2640 ft; Bowman-Hicks 2, 35-8-12, set 6⅝ cas 2330 ft, wo 2690 ft; Bowman-Hicks B-1, 24-7-14, set 6⅝ cas 2073 ft, bailing to test, td 2470 ft. Warner Quinlan Co.'s Sabine 2, 34-8-12, lcn. Stovall Drilling Co.'s Lefkovitz 1, 33-8-12, set 6⅝ cas 2328 ft, wo 2699 ft. Le Grande et al's Giaque 1, 6-7-12, lcn. D. H. Reddick, Tr.'s, Scretchfield 1, 16-9-12, sd wo 2590 ft. H. S. Autrey's Long-Bell Lbr. Co. 1, 35-8-14, set 8¼-inch cas 1804 ft, topped marl 1907 ft, dr 2373 ft. Paramount O&G Co.'s Woolums 1, 11-6-12, sd 1650 ft. Zeke Lohman's Wyatt Lbr. Co. 1, 18-4-11, dk. Pelican Nat. Gas Corp.'s La. Long Leaf Lbr. Co. 1, 4-7-11, pumping wo gauge, td 2425 ft. La. Long Leaf Lbr. Co. 2, 20-7-12, dr 1428 ft. Sabine Lbr. Co. 1, 1-7-12, topped marl 2292 ft, set 6⅝ cas 2310 ft, tested sw arr abn, td 2833 ft. Ray-Dawes Drilling Co.'s Mansfield Hdw. Lbr. Co. 1, 36-8-13, set 6⅝ cas 2115 ft, wo 2550 ft. Henshaw et al's Sabine A-1, 31-8-12, sd 2525 ft; Sabine A-3, 31-8-12, lcn; Sabine B-1, 31-8-12, TA 2640 ft. C. L. Jett, Tr.'s, Jones 1, 31-8-12, set 6-inch cas 2154 ft, hfo wosr, td 2210 ft. E. C. Simmons' Leach 1, 31-8-12, lcn; Anderson 1, 31-8-12, lcn. Dooley & Howard's Williams 1, 31-8-12, dk. Joe Burnham et al's Bolin 1, 31-8-12, TA 2436 ft; Bolin 2, 31-8-12, dr 1675 ft. Glassell & Merren's Thomas 1, 31-8-12, set 6⅝ cas 2201 ft, wo 2610 ft; Sabine Lbr. Co.'s Fee 1, 31-8-12, set 6-inch cas 2219 ft, wo 2610 ft. W. S. Smith et al's Colquitt 1, 31-8-12, dk; Williams 1, 31-8-12, rig up; Henderson 1, 31-8-12, dk. F. M. Hood's Winston 1, 31-8-12, pumping 40 bbls oil 2515 ft. Bahan & Bahan's Meshell 1, 32-8-12, sd wo 2570 ft. J. R. Crawford's Meshell 1, 32-8-12, sd 1950 ft. Central Pet. Co.'s Baptist Church 1, 31-8-12, set 6⅝ cas 2159 ft, 200 ft oil in hole, td 2350 ft. Philp Bros.' Dow 1, 31-8-12, dr 1465 ft. Longoria et al's Belton 1, 31-9-13, rig up. Dudney et al's Perason 1, 31-8-12, set 6⅝ cas 2194 ft, tested dry, show oil 2370 ft, arr test at td 2576 ft. Jones & Johnson's Pearson 1, 31-8-12, set 6-inch cas 2248 ft, pumping 35 bbls oil day, td 2318 ft. Allen & Thompson's Wall 1, 31-8-12, topped chalk 2294 ft, set 6⅝ cas 2159 ft, td 2305 ft. Gerke et al's Okerson 1, 31-8-12, dk. L. D. Allison's Holliday 1, 31-8-12, rig up. McFann & Pace's Reeves 1, 31-8-12, sp set 10-inch cas 101 ft, dr 550 ft. W. D. Perritt's Crow 1, 30-8-12, dr 2150 ft. L. Nagle's Corky 1, 31-8-12, set 6-inch cas 2202 ft. Teteco Oil Corp.'s La. Long Leaf Lbr. Co. 1, 18-6-12, setting 12½ cas. R. B. Whittle's Corley 1, 31-8-12, lcn. Central Pet. Co.'s McCormick 1, 31-8-12, rig up. San Miguel Oil Corp.'s Blankenship 1, 20-9-11, dk. Wheatcroft et al's Sabine Lbr. Co. 1, 31-8-12, rig up. F. M. Hood's Winston 2, 31-8-12, rig up. H. E. Granville's Parrott 1, 31-8-12, dk Posey et al's Peterson 1, 31-8-12, dk.

TENSAS PARISH—Willis et al's Curry 1, 39-11-12e, sd 1769 ft.

UNION PARISH—Fred Stovall's Stovall 1, 32-23-4e, moved rig high water; Murray 1, 32-23-4e, lcn.

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zingo 1, 27-18-8e, bailed 8-inch cas dry, wo, td 1698 ft. Pat Hudson's Gardner 1, 1-22-11, dk. Magnolia Pet. Co.'s Scroggins 3, 1-22-11, set 8¼-inch cas 2669 ft, wosr, td 2707 ft. Mount Vernon O&G Co.'s Pardee 3, 3-22-11, set 6⅝ cas 2655 ft, 4 ft sand, sr, td 2663 ft. Sarepta Oil Co.'s Slack 1, 36-23-11, rig up; Gardner 2, 1-22-11, rig up. Merrick Oil Corp.'s Slack 2, 36-23-11, sp set 10-inch cas 117 ft, dr 1710 ft. Reid Clark et al's Bolinger 1, 21-22-11, dr 1760 ft. E. W. Bateman's Cook 1, 2-22-11, lcn; Cooke 2, 2-22-11, lcn. Ideal O&G Co.'s Coyle 1, 24-23-11, dk. K. C. Supply Co.'s Cochran 1, 36-23-11, rig up. J. S. Martin, Tr.'s, Traylor 1, 36-23-11, rig up. Magnolia Pet. Co.'s Goodson 1, 1-23-11, dk pat.

WEST CARROLL PARISH—Palmer Corp.'s Marston A-1, 11-19-10e, set 5-inch cas 2592 ft, dry abn td 2800 ft.

ANSWERS

to questions found on page 95

1. Experiments show that water-flooding efficiency decreases markedly as the viscosity of the oil increases.

2. The amount of gas held in oil in solution is affected by the formation temperature, the higher the temperature, the smaller the amount of gas in the oil.

3. There are three reasons for using aluminum paint on steel storage tanks. They are: first, to lower evaporating losses; second, to prevent corrosion, particularly where tanks are subjected to the inroads of hydrogen sulphide, and lastly, to improve the general appearance of the tanks.

4. There are numerous salt domes in Germany, similar in character to those found on the Gulf Coast of the United States, which give promise of oil production at rather low depths. Companies are being formed to test this part of Germany, one American company having been already formed for operations in Germany, with plans for the drilling of several deep tests in promising areas.

5. The Balcones fault system is a belt of faulting extending through a large part of Texas from the Rio Grande river eastward to the vicinity of San Antonio, thence northeastward through Austin, then on to East Central and North Texas. Along this fault are located oil fields known as the Luling district and the Mexia-Corsicana district.

6. The California gas conservation law was passed August 1, 1929. The law is practically inoperative now because of an injunction being granted a particular group of independent operators, which in turn nullifies the injunction issued some time ago by Judge Hazlett, which was intended to put teeth into the statute.

7. Reports from state registration authorities to the Bureau of Public Roads, U. S. Department of Agriculture, show a total of 26,501,443 motor vehicles registered in 1929.

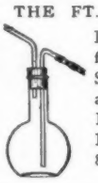
8. Porosity is the ratio of effective pore space to the volume of sand, and represents the capacity of a sand for storing oil.

9. Various producing practices, all of which are not always successful, to obtain the most efficient use of gas energy and to keep the recovery gas-oil ratio low include: correct spacing of wells and systematic drilling program; the application of pressure control; repressuring, gas drive, etc.; gas and air lift flowing methods, and suitable equipment for pumping, properly applied.

10. Oil exists in its undisturbed reservoir rocks under a pressure which generally corresponds rather closely with that of a column of water of a height equal to the depth of the reservoir below the surface. This pressure is usually hydrostatic. In some reservoirs the oil pool is not backed by water in hydrostatic connection with it, so that only the expansive force of the gas associated with or dissolved in the oil is available to force it out of the well. In still other instances the oil pool is backed by both water and gas with the result that the tapping of the reservoir is accompanied by the spectacular production of the gusher type with the sustained later production characteristic of hydrostatic water drive.

USED CASING—All sizes—huge stock 6⅝"—17 lb. Also 20 and 24 lb.. Also several miles line pipe all sizes. 8¼", 10" and 12½" casing. D. Hansen, Tulsa, Okla., 504 Philtower.

THE FT. WORTH LABORATORIES



Field Gas Testing. Analysis of oil field brines, gas minerals and oil Sell Thermometers, Hydrometers and Laboratory Glassware.
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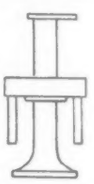
EXPERT MECHANIC SHOP
Walter G. Thiele, *Prop.*



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In the Gulf Coast Territory—Specialists in Oil Field Equipment
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Successors to
Calvin Wheat Commercial Studio

«««and so he said

In the picture are H. E. Sullivan and Driller L. J. Ryals on the Bowman-Hicks No. 5, while in the upper corner are shown Driller Reese Place with his gang looking at the volcanic ash core taken from Bowman-Hicks well No. 2.

H. E. Sullivan — LORING OIL CO. — P. O. Box 265

BENEDUM-TREES OIL COMPANY

MANY, LOUISIANA

May 1 1930

Mr.H.S.Peeler,
Reed Roller Bit Company,
Shreveport,La.

Dear Sir;

You were inquiring as to the success of the seven and three quarter inch Reed-Elliott Core Bit purchased from you for use in the Zwolle, Louisiana field.

We are more than pleased with this tool as the first time that it was run in the Bowman-Hicks well #2 we cut ten feet of core of which five feet was soft Volcanic Ash and this was the first time in the histony of this field that this particular formation had been succesfully recovered by any core barrel. This was taken with the Reed hard formation head and the cutters on this head cut a total of 135 feet of hole with 100% recovery.

This bit was transfered to Bowman-Hicks well #5 and we have changed cutters on this head five times and the head shows little or no wear so far. Our core recovery will average 95% and we have also run three of your Reed-Elliott soft formation heads on this bit with equal results.

Yours very truly,
H. E. Sullivan
General Superintendent.

HES/P

Ask us to mail you our booklet on the Reed-Elliott Hard and Soft Formation Core Bits

« « «

REED ROLLER BIT COMPANY

150 Broadway,
New York, N. Y.

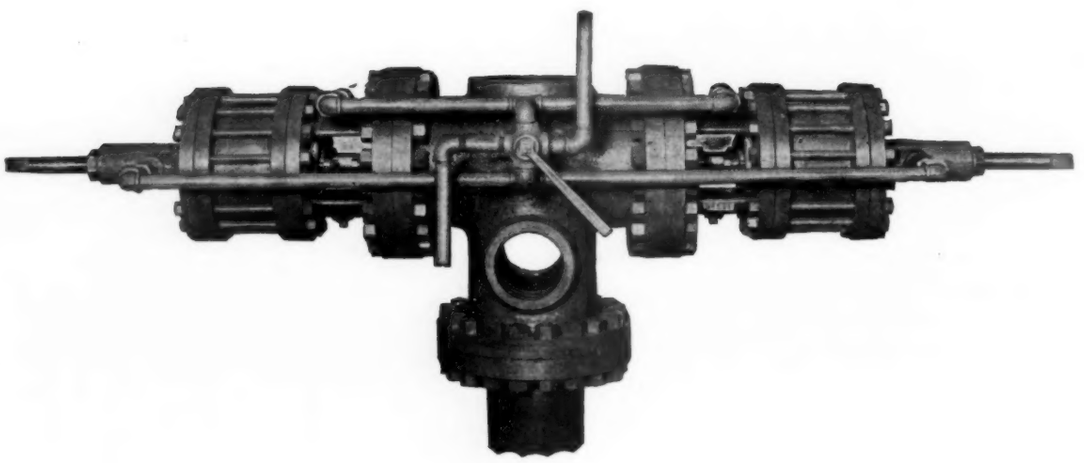
HOUSTON, TEXAS

1317 Esperanza,
Los Angeles, Calif.

Gulf Coast and Mid-Continent Distributors
MARTIN-DECKER and CALMEC PRODUCTS

The Steel Around Steel

Grip Holds . . . regardless of the amount of drill stem in the hole



Length or weight of drill stem in the hole, thickness of mud or strength of pressure IS NOT a factor in the successful operation of the Cameron Iron Works Steam Operated Blowout Preventer.

The solid steel rams with their specially designed packing are sufficient to prevent the strongest pressures from blowing out the pipe. Couplings or tool joints cannot pass through the circle of solid steel the closed rams form around the drill stem.

This steel against steel grip is taken instantly, and without endangering the workmen, by remote control. A quarter turn of the 4-way operating valve which is located at a safe and convenient distance from the well closes the rams. Auxiliary locking screws securely lock rams in place.

Get all the facts and features of this Blowout Preventer by asking us for a copy of our recently issued booklet. We will be glad to send it free.

CAMERON IRON WORKS INC.

HOUSTON TEXAS

STOCKS AT—Petroleum Equipment Co., 2800 S. Alameda St., Los Angeles, Calif.; Bridgeport Machine Co., Oklahoma; Hercules Supply Co., Hobbs, New Mexico.
For sale by all leading supply stores.

New Equipment for the Field

Machinery - Tools - Catalogs - Books

Emulsion Coating Tool

J. B. W. GARDINER, INC.

J. B. W. Gardiner, Inc., 50 Church street, New York City, producers of Hydralt pipe coating, announce the introduction of a process for applying emulsion to pipe lines.

This process has patent pending and application has been filed for patent on a tool with which the process is to be carried out. The purpose of the tool, which is illustrated here, to make possible the application to the pipe of a heavy coat of material of any desired thickness with uniformity.

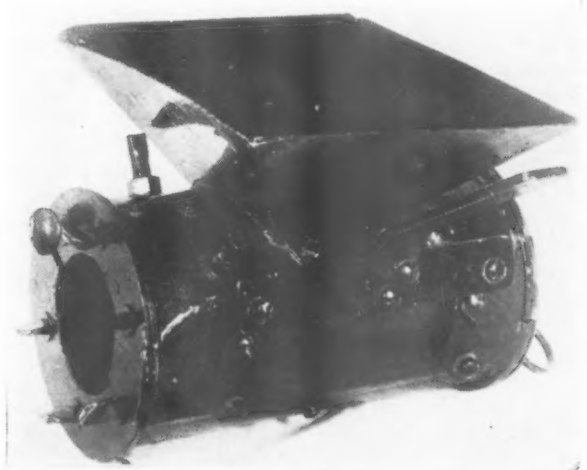
The design of the tool is such that the necessity for skilled labor in applying the coating has been eliminated. The process is such that labor cost involved is described as being practically the same regardless of the size of the pipe.

A short section of pipe (about 10 inches long) is entirely surrounded by emulsion, and this body of material is moved along the pipe. In so moving it, a backward surge of the coating material is produced through its own inertia, to eliminate air bubbles and completely wet the pipe. As the material is advanced along the pipe a uniform coating of the desired thickness is deposited on the pipe wall.

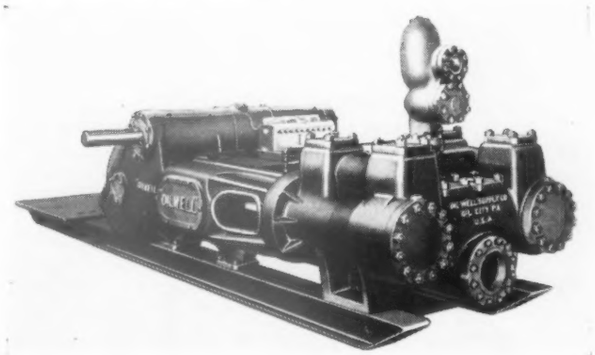
The tool for carrying out this process consists essentially of a metal collar which is clamped about the pipe and held at a constant distance from the pipe wall by a series of studs. A set of springs on the side opposite the studs press against the pipe to give it stability. The front of the collar is closed around the pipe by a gasket which fits against the pipe wall to prevent leakage.

The back is made up of a series of blades which together make up a circle. These blades are adjustable by means of set screws so that the distance from the edge of the blades to the pipe wall may be regulated. The emulsion is poured in through an opening in the top of the tool and floods the pipe forming a wall in which the pipe rests, the only outlet which is between the adjustable coating blades and the pipe wall.

The collar, when filled, is drawn along the pipe, and as it passes over it deposits a thickness of coating corresponding to the adjustment of the coating blades. The tool is only 10 inches long.



Hydralt Coating Tool



New Oilwell Slush Pump

New Slush Pump

OIL WELL SUPPLY COMPANY

Oil Well Supply Company announces the new Imperial No. 14-P (7¼ x 14 inches) power slush pump. This pump, Imperial No. 14-P, with the Imperial No. 20 (15 x 7¾ inches) and the Imperial No. 14 (14 x 7¼ x 14 inches) comprise the "Oilwell" new series.

In the new Imperial No. 14-P, the heavily constructed power end furnishes strength in excess of that actually required for present day drilling. Particular attention was given this feature from the beginning which resulted in the twin side crank construction for easily transmitting the rated power input. The twin side crank construction permits the use of a much shorter and stronger shaft with the advantage of roller bearings on the crank pins. To eliminate gear teeth chatter and to increase power transmission efficiency, single helical cut gears and Timken roller bearings on main bearings, crank pins and pinion shaft are used.

Pinion shaft and main shaft assembly can be reversed completely to permit doubling the life of gears and to make it convenient to drive the pump from either side. Two pumps can be run with the ends facing each other. The pinion gear can be reversed on its shaft, or the complete shaft changed from one hand drive to the other without the necessity of correspondingly reversing the main gear to make the teeth mesh properly.

Protection of gears and bearings is afforded by their total enclosure in the power frame. The frame is a unit casting, bolted directly to the fluid end, making a rigid unit with only two principal castings. The cradle is longer than the stroke of the pump so that no part of the piston rod entering the fluid end of the pump can enter the power end, and in this manner prevents mud from getting into the power end.

Automatic lubrication to the various bearings, gears and crossheads is furnished through piping by means of a 10-feed force and sight feed lubricator. This lubricator, driven by the crosshead, is mounted on top of the frame directly behind the pinion shaft housing. The proper amount of fresh, clean oil is constantly supplied, while the used oil is constantly drained. This system of automatic lubrication affords the utmost protection to the roller bearings, assuring safe, smooth and grit-free operation.

New type liner spacers, with internal set-screws, allow

the removing of the cylinder heads without disturbing the liner adjustment. Of more importance is the fact that the liner remains locked in position during the changing of the pistons. There is no necessity of adjusting and packing the set screw each time the pistons are removed as is the case with the outside set screw arrangement. A special heavy duty liner rubber sleeve is held securely in place between the shoulders on the liner and the cylinder by set screws in the liner spacer.

D. & M. pistons are used. Crank shaft, pinion shaft, piston rods, fluid valve and valve seats are made from forged alloy steel. Valves are reversible. The fluid end is tested hydrostatically to 3000 pounds. The maximum power input capacity of the new Imperial No. 14-P is 150 brake horsepower.

New Automatic Controls

New Automatic Controls

NATIONAL TANK COMPANY

National Tank Company, Tulsa, has announced the new National Type A. I. C. controls, designed to utilize the pressure carried on the separator or any constant supply of gas or air of sufficient pressure for operating energy. They were designed for use on the company's oil and gas separators to meet troublesome conditions.

The purpose of these new controls is to operate the oil valve in the separator instantaneously from a wide open position, without an intermediate standing position, to reduce valve wear or cutting out and freezing. The construction of this control is such that it may be operated as a float powered level control if such a change is desired.

The best operating pressure is given as not exceeding 25 pounds. When the supply of operating energy exceeds this amount, pressure reducing regulators are used to reduce the pressure.

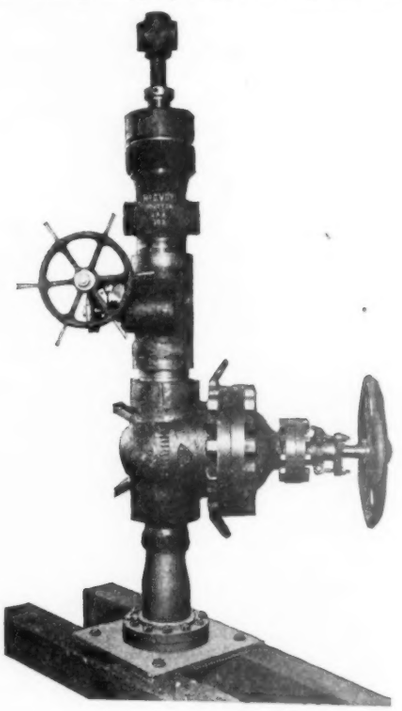
Complete details of design, construction and operation of these new controls is available by referring to National Tank Company's Catalog No. 7, Section 1. This catalog may be obtained upon request to the company at Tulsa.

Tubing Retractor Head

J. H. McEVOY & COMPANY

J. H. McEvoy & Company, 600 Milby Street, Houston, has just added a tubing retractor head to its line of high pressure casing and control heads. It is designed strictly to meet the demands of today in combatting high pressures. The retractor head allows the opening and closing in the master valve at the Christmas tree at all times, even with tubing in the hole.

As the accompanying illustration shows, the inside of the heavy forged steel bushing between the master valve and the main string of casing is a beveled seat or shoulder which forms a seat or rest for the tubing hanger. Supporting the tubing is the tubing hanger, which is made with deep flutes to afford free circulation between the casing and tubing. A bowl or seat is made into the top of the tubing hanger for a movable plunger, which works on a rack and gear assembly and is controlled by a hand wheel and spiral gear. The plunger is seated in the tubing hanger when the well is flowing. However, at any sign of trouble such as a sand cut-out in the manifold on the well, or a leak, the telescope is retracted past the seats and gate of the well head manifold master valve, leaving the latter free to be closed.



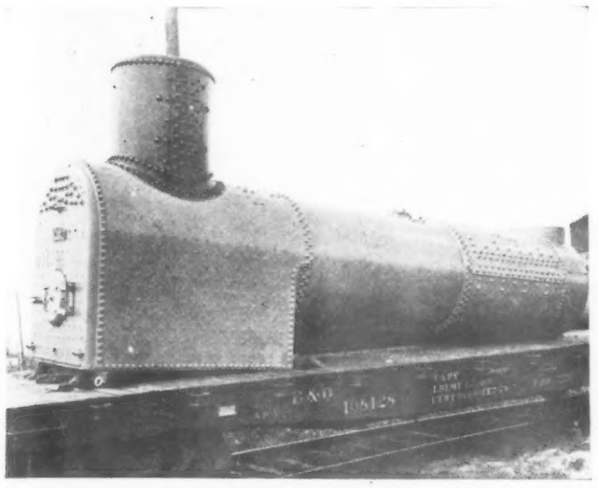
Tubing Retractor Head

The retractor head is designed and constructed for operation under 2500 pounds gas pressure with difficulty.

Additional information is available by writing the company at Houston headquarters.

Allied Construction and Engineering Company has been incorporated with offices at 604 National Bank of Commerce Building, Tulsa, to engage in engineering, design and construction of works allied with the refinery, pipe line, gasoline, marketing and production operations of oil companies. M. A. Rutis, F. E. Richardsoin, W. C. Ray and A. W. Rush are included in the company.

NEW EQUIPMENT FOR THE FIELD



New Donovan Boiler

New Oil Field Boiler

DONOVAN BOILER WORKS, INC.

Donovan Boiler Works, Inc., Parkersburg, West Virginia, is marketing a new mammoth boiler, announced by the company as being the largest boiler yet built for service in the oil field.

This boiler is rated at 125 horsepower and built for 350 pound steam working pressure, but with heating surface being taken to include only the inside surfaces of the tubes and firebox, it has 1318 square feet. Thus the actual horsepower, A. P. I. rating, is given as equivalent to 131.8 horsepower. With the outside surfaces of tubes and firebox only considered, the heating surface is 1470 square feet.

The boiler has been designed and constructed to meet the demand for deeper drilling, and several of them have already been placed in service in the Oklahoma City field.

It is of the open bottom type, similar to that embodied in present day locomotives. The mud ring is made of heavy bar three inches thick.

The firebox is 84 inches long inside, making it one of the longest used in an oil field boiler. It has 105 three-inch tubes 16 feet long. The dome is 40 inches in diameter, probably the largest yet used on an oil field boiler.

Other features in detail may be obtained on this new boiler by writing the manufacturers at the Parkersburg headquarters, or the Frick-Reid Supply Corporation, Tulsa.

New Control Device

GENERAL ELECTRIC COMPANY

General Electric Company, Schenectady, New York, announces a new device for controlling the operation of industrial machinery by the interruption of a beam of light. It is a photo-electric relay, essentially a vacuum tube device, and uses both the photo-electric tube and the pliotron.

It is designed to control industrial operations in which a change of light is involved. A machine which travels in a certain direction for a certain distance and is then stopped or reversed, is given as a typical application. When the traveling mechanism reaches its limit it would interrupt a beam of light falling on the photo-electric tube and thus cause the control device to function.

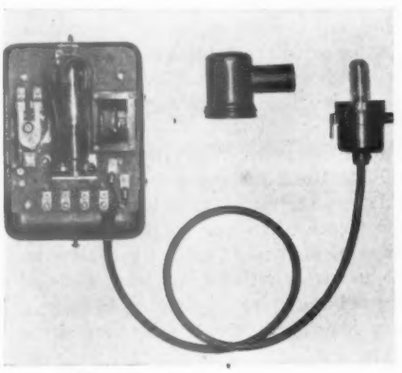
The new relay bears the General Electric designation CR-7505-A-1. It is designed for use in controlling an electric circuit in response to an increase or decrease in the amount of light falling on the photo-electric tube. The company lists the following advantages resulting from its use:

It operates without shock or resistance to the progress or movement of the object which actuates it, or without impairing the accuracy of delicate mechanisms; it can be located remotely from the equipment controlled, thus permitting mounting in small spaces around automatic machinery; it is adjustable in sensitivity; it can be used outdoors by mounting in a watertight enclosing case; it is easily installed, and its operation is easily adjusted or changed; it can be operated at high speeds, 100 times a minute being an approximate maximum.

For some applications it may be necessary to select carefully a suitable light source and optical accessories, but for many cases the light source may be a domestic Mazda lamp with or without a simple reflector and shield.

The standard electric supply for the relay is 110/120 volts, 60 cycles, alternating current. The device may, however, be built on demand for other frequencies or voltages, and a similar device for operation where only direct current is available can be obtained.

The operation of the relay is described technically as follows: With a voltage of proper polarity and magnitude applied between the two elements of the photo-electric tube, the current it passes is proportional to the amount of



New G. E. Control

light shining on it. This current (of the order of a few micro-amperes) is amplified by a pliotron. The sensitive relay is connected in the plate circuit and is energized or de-energized in accordance with the amount of light on the photo-electric tube. The contacts of the relay control the coil circuit of the contactor. When the relay in the plate circuit of the emplifier is energized, it will first open its normally-closed contacts and then close the normally-open contacts. This relay, therefore, either makes or breaks the coil circuits of the contactor depending on how it is connected.

When the contactor is de-energized approximately 10 watts is required by the device, and when the contactor is energized approximately 30 watts is required.

Mid-Continent Oil Directory Company, P. O. Box 1595, Dallas, Texas, has ordered more copies printed of its Mid-Continent district oil directory, which is the most complete source of information pertaining to companies and individuals active in the oil industry in Texas, Oklahoma, Louisiana, Arkansas, Kansas and New Mexico. The directory is to be issued annually, and the demand for the initial issue exceeded the original estimates. Special sections in the book are devoted to listing concerns allied with the petroleum industry throughout the Mid-Continent.

Manufacturer and Supply Dealer Notes

W. S. Rugg, vice president in charge of engineering, Westinghouse Electric and Manufacturing Company, East Pittsburgh, has recently been placed in charge of sales activities in addition to engineering activities, according to an announcement by F. A. Merrick, president. By this appointment, Rugg takes over the activities of Edward D. Kilburn, vice president and general sales manager, who resigned, effective April 16.

S. M. Kitner, director of the Westinghouse research laboratory, has been made assistant vice president and assumes engineering duties under Rugg's direction.

W. S. RUGG

W. S. Rugg has been with the Westinghouse company since 1892. Following engineering and sales work in the Chicago territory, he was transferred in 1909 to New York in charge of that office. In 1917 he was moved to the East Pittsburgh office. He was made general sales manager in 1922 and was elected vice president in 1925.

Trackson Company, Milwaukee, has issued an attractive eight-page circular which describes the outstanding features of the new Trackson crawler wheels. These wheels are built for mounting on various makes of wagons and bummers. The circular is of interest to men in the oil and gas pipe line industries whose operations involve hauling pipe, boilers, drill rigs and other heavy machinery and supplies.

Ludlum Steel Company, Watervliet, New York, is furnishing its 1930 literature, including a catalog, a reference book and a booklet on tool steel, in a handsome loose-leaf binder for the convenience of its customers. The catalog covers the company's line of high speed carbon and alloy tool steels, corrosion, heat and wear-resisting steels, valve steel and Strauss metal. The tool steel booklet devotes 48 pages to discussions and tables on high speed special alloy carbon steel for special purposes. The third book is a reference book of steel treating tabulations.

Foster Valve Company, Ltd., Torrance, California, has issued a four-page bulletin which describes and illustrates in detail the Foster adjustable plug valve. The plugs and seats on this valve are removable, it requires no lubrication, it is kerosene tested, and the design is especially directed to elimination of eddy currents and friction loss.

Specialty Oil Tool Company, Los Angeles, has issued a new loose-leaf catalog containing illustrations, descriptions and prices of the entire line of "Sotco" rotary fishing tools and oil field specialties. This catalog is available upon request to the company's sales offices, 507 Merritt Building, Los Angeles.

Hazard Wire Rope Company of Wilkesbarre, Pennsylvania, recently announced the appointment of the Baash-Ross Tool Company as the exclusive distributor for all of its wire rope products in Southern California. Hazard Wire Rope Company has been serving the industry in California oil fields; and in order to better serve their customers will, through Baash-Ross Tool Company, have stocks in all of the popular sizes and lengths of drilling, casing, improved casing, and sand lines in their various field plants.

Baash-Ross Tool Company's sales organization with field plants at 2609 Cherry Avenue, Long Beach; 113 North Pomona Avenue, Brea; 1725 Ventura Avenue, Ventura, and at Taft, will be able to offer an emergency service.

Oil Well Improvements Company, of Tulsa, announces an expansion program involving an expenditure of approximately $45,000. The company has purchased the administration building and adjacent land occupied by the firm as general offices for the past two years. The building is a two-story brick structure with concrete floors, fireproof vaults and all modern office conveniences.

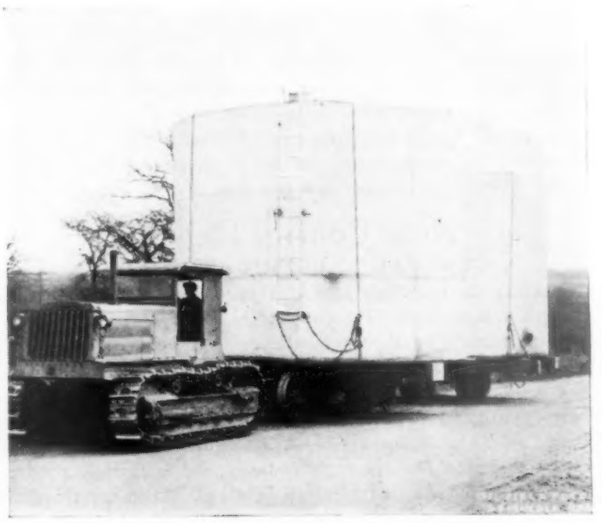
The company will also erect an additional factory building 30 x 90 feet to house its enlarged pattern shop, pattern storage rooms and cleaning rooms, where it will clean castings produced in its foundry. The removal of these departments to a new building will enable the company to enlarge its foundry capacity and install new equipment in the machine shop.

The company has its own engineering department and designs, manufactures and sells its own equipment, using supply store outlets for its products.

The company holds patents and manufacturers O.W.I. control heads and roller oil savers, Apex stuffing boxes and casing heads.

Hyatt Roller Bearing Company, Newark, New Jersey, has appointed C. L. Newby manager of its western division with headquarters in Chicago. Newby has been associated with the company since 1918 as sales engineer on general industrial, oil field, railroad and farm machinery applications. Prior to his assignment he was assistant manager of the western division, Chicago headquarters.

Hughes Tool Company has just had issued a four-page folder giving prices and approximate weights, effective May 15, 1930, of the new Hughes "Automatic" core bits for hard and soft formations. One of these price sheets, which carry complete illustrations of the new bits, is available by writing the Hughes Tool Company's main office at Houston, the Los Angeles or Oklahoma City service plants or the New York City export office.



The accompanying photograph shows Carter Oil Company moving 18 tons of tanks from Cromwell, Oklahoma, field to Earlsboro field, a distance of 25 miles. The trip was made in 10 hours running time, using an Allis-Chalmers Monarch "75" tractor as power for the trucks on which the tanks are mounted. These tanks measured 19 feet in height and 15 feet in width.

"Oil Fields in the United States," a new book by Professor Walter A. Ver Wiebe, the University of Wichita, is an authoritative and interesting presentation of data covering the major and most of the minor oil producing areas in the United States.

In this book the author has adopted a new basis of classification known as the "tectonic classification" or the relationship which oil fields of widely separated areas have with each other, which is controlled by the large structural features, or tectonic elements. With the tectonic setting as a background, the essential details of the stratigraphy in each province and in each district are treated at length, equal emphasis being given to the peculiar structural conditions which have controlled the accumulation of oil and gas in each province and district as well as in certain typical fields and pools. The nature, thickness, and correlation of the oil horizons are given as much space as these important topics warrent.

Illustrations used in the book include maps and diagrams prepared by geologists who are particularly well informed on the characteristics of individual areas.

Professor Wiebe has drawn material from his 15 years of field experience and six years of teaching petroleum geology, and presents a complete and up-to-the-minute summary of facts needed by the student, field geologist and oil company executive.

Copies of this booy may be secured from the Gulf Publishing Company, P. O. Box 1307, Houston, Texas. Price $6.00.

C. H. Wheeler Manufacturing Company of Philadelphia has recently published and is mailing out a 132-page book titled "Steam Condensers." This book, handsomely compiled and bound, discusses in detail "Elements of the Condensing Process," "Economics of the Condensing Process," "Jet Condensers," "Surface Condensers," "Condensing Equipment Auxiliaries," "Condensing Equipment Accessories," and "Properties of Saturated Steam." It is fully illustrated. Persons interested in securing a copy should communicate with the company's Philadelphia headquarters.

Republic Steel Corporation, Youngstown, Ohio, will start large scale production of electric welded pipe at the company's new pipe mill, according to Tom M. Girdler, chairman of the board of directors. Completion of the mill is being rushed and all of the important equipment is in place with the exception of two large machines which are expected to be installed by the end of the current month.

This pipe will be produced under the Johnston patents, controlled by the company.

With the completion of the new production unit, Republic Steel Corporation will have two mills for making small pipe from two to eight inches in diameter, and one mill for making pipe from eight to 16 inches. Total capacity of the mills will approximate 30,000 tons annually.

The Oil Well Fishing Tool Company, Long Beach, California, just issued a new folder entitled "The Dumble Combination Grab." This new addition to the Dumble list of literature treats with the construction, operation and general description of the Dumble combination grab for use with either rotary or cable tool drilling operations. The contents give a complete survey of the possibilities offered by this fishing tool.

The new folder is in three colors. It carries as its background the new Dumble trade mark the slogan of which is "For a Sure Catch, Bait your Pipe with a Dumble," and a display of the working parts of the Dumble Combination Grab.

Copies of this folder may be obtained by writing to the Oil Well Fishing Tool Company, 2750 Cherry Avenue, Long Beach.

FOR PIPE LINE WORK USE AMERICAN "CHIEF" HEATERS

COILLESS TYPE OIL BURNERS AND TORCHES 30 TO 1000 GALLON CAPACITY

INQUIRIES SOLICITED

AMERICAN STEEL WORKS
1211 W. 27TH ST., KANSAS CITY, MO.

Costs Less - - - - - - Last *therefore* -- costs least - -

WASHINGTON STRUCTURAL STEEL DERRICKS are not cheap in first cost compared to a wood structure. But they are endowed with ability to give service, over many years on many wells. There's no rotting, warping, twisting or breaking, with Washingtons. Cost of removal and re-erection on a new location is generally less than the cost of the new wood required to replace breakage in re-erection of a wooden job.

Some of our derricks have already drilled 25 wells and are still in good working condition. This is the dividend of satisfaction that Washington Derricks pay on the investment. They cost less—last; therefore they cost least.

Why Experiment? Washington Derricks Will Drill Your Wells and Pull the Casing.

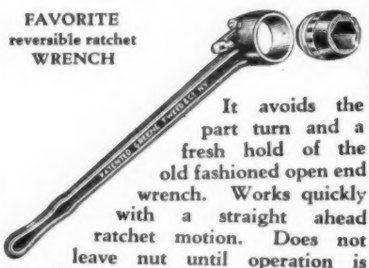
WASHINGTON STRUCTURAL STEEL DERRICKS

O'Brien Steel Construction Company, Inc.
Washington, Penna.

Western Representative: RIG EQUIPMENT CO.,
1524 So. St. Louis St., Tulsa, Okla.

To cut out all the lost motion of nut turning use the

FAVORITE
reversible ratchet
WRENCH



It avoids the part turn and a fresh hold of the old fashioned open end wrench. Works quickly with a straight ahead ratchet motion. Does not leave nut until operation is completed—no slipping.

Write for particulars

BUILT STRONG
FOR ROUGH USAGE

Greene, Tweed & Co.
Sole Manufacturers
109 Duane St.,
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ATWOOD

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SPECIALTIES FOR PRESSURE AND TEMPERATURE

Squeaks from the Bull Wheel

HOW TO BE AN EXECUTIVE.

If you have ever had a hankering to be a great, big executive, you'd better read this. Just follow a few simple rules prescribed by Robert Carter in Nation's Business. Summarized, here they are:

Always arrive at the office after the last man.

Don't notice or say "Good morning" to any one you pass in the corridor. (This does not mean the Polish Corridor.)

Announce your arrival at your desk by ringing all the buzzers at your disposal.

As your breathless staff members rush in, give them the day's instructions. Always make this particularly snappy.

After having put into the organization that dynamic urge which only an executive can impart, relax and take things easy. You must reserve your strength for golf.

While relaxing with your feet on the desk, unfold your newspaper and read the latest developments in the sporting world.

Never permit yourself to become absorbed in detail. Let the office boy do that.

Always take two hours for luncheon—never lunch. Those who see you leave and return will understand that you transact much important business over the drinking cups.

And then about the telephone. Never answer the first ring, and be sure to have your secretary ask the name of the party calling.

Remember the clean desk—the sine qua non of an executive. A clean desk is a sure sign of a big executive.

And finally, you must leave the office early to play golf. You must not show up at the office on Saturday.

"My folks will be proud to get this letter."

"Why is that?"

"They thought I'd have hard work to get a job, and here I've had six already this month."

The orderly officer was doing the round one morning, and after he had asked the men if there were any complaints, one stepped forward and declared he had been supplied with a ginger-ale bottle that contained benzine instead of ginger-ale, and that he had drunk half the benzine unknowingly.

"All right," replied the officer. "You had better not smoke for a few days."

An uplift worker, visiting a prison, was much impressed by the melancholy attitude of one man she found.

"My poor man," she sympathized, "what is the length of your term?"

"Depends on politics, lady," replied the melancholy one. "I'm the warden."

The late Ambassador Walter Page was formerly editor of the World's Work, and like all editors was obliged to refuse a great many stories. A lady once wrote him:

"Sir:—You sent back last week, a story of mine. I know that you did not read the story, for as a test I had pasted the pages 18, 19 and 20 together, and the story came back with these pages still pasted, so that I know you are a fraud and turn down stories without reading same."

Mr. Page wrote back:

"Madam:—At breakfast, when I open an egg, I don't need to eat the whole egg to discover it's bad."

During a recent first showing of a movie in a Broadway theatre in New York, Douglas Fairbanks, Mary Pickford and the Talmage sisters were present in person, and autograph collectors were crowding down the ailse toward the stage.

"Why don't you get the autograph of that white haired gentleman in the fifth row?" sand a newspaper man to one of them.

"Who is he?" inquired the girl excitedly.

"Only General Pershing."

She smiled in mingled mirth and pity.

"Signatures of soldiers don't mean anything to us."

Little Albert came home from school with a new book under his arm. "It's a prize, Mother," he said.

"A prize? What for, dear?"

"For natural history. Teacher asked me how many legs an ostrich had, and I said three."

"But an ostrich has two legs."

"I know that now, Mother, but the rest of the class said four, so I was the nearest."

The late William Rockefeller used to tell with delight a story illustrative of the financial genius of his famous brother, John. When John was a little fellow, a so-called Indian doctor visited the town with a cure-all. To get trade started, he took out a bright new dollar and said he would auction it off.

"How much am I bid," he asked, "for this bright new silver dollar?"

But the crowd was cautious, silent, suspicious. No bids were heard.

"How much am I bid?" shouted the Indian doctor again. "Come on, gents; a nickel, a dime?"

"I'll bid a nickel," piped John D. Rockefeller, at last.

"The dollar is yours, boy," said the doctor, "hand up your nickel."

"Take it out of the dollar," piped little John D., "and gimme 95 cents change."—Readers Digest.

One hour later this truck looked new!

OAKITE makes light work of cleaning dirty tank trucks. And those belonging to one southern refinery were ***dirty***—so completely covered with a gasoline and oil scum that before cleaning, it was impossible to tell what colors they were painted. Even their red lettering, once strikingly evident, was unreadable.

But an hour after the Oakite solution had been applied to the first truck, its colors again stood out clear and bright, almost like new. And the paint was not affected in the slightest.

That is typical Oakite performance—the kind you can expect on any truck, storage tank, or tank car cleaning job. Write for booklet. No obligation.

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Sullivan Diamond Drill cuttings are fine. They are washed away with oil. There is nothing in the hole to freeze. During 1929 13 Sullivan Core Drilled Wells in Turner Valley produced more than the 30 other wells in the field.

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Send for specific information and proof of the facts and figures presented here. Let us mail you our catalog, and other literature. May we send a representative who is near you now? Address Department A-25.

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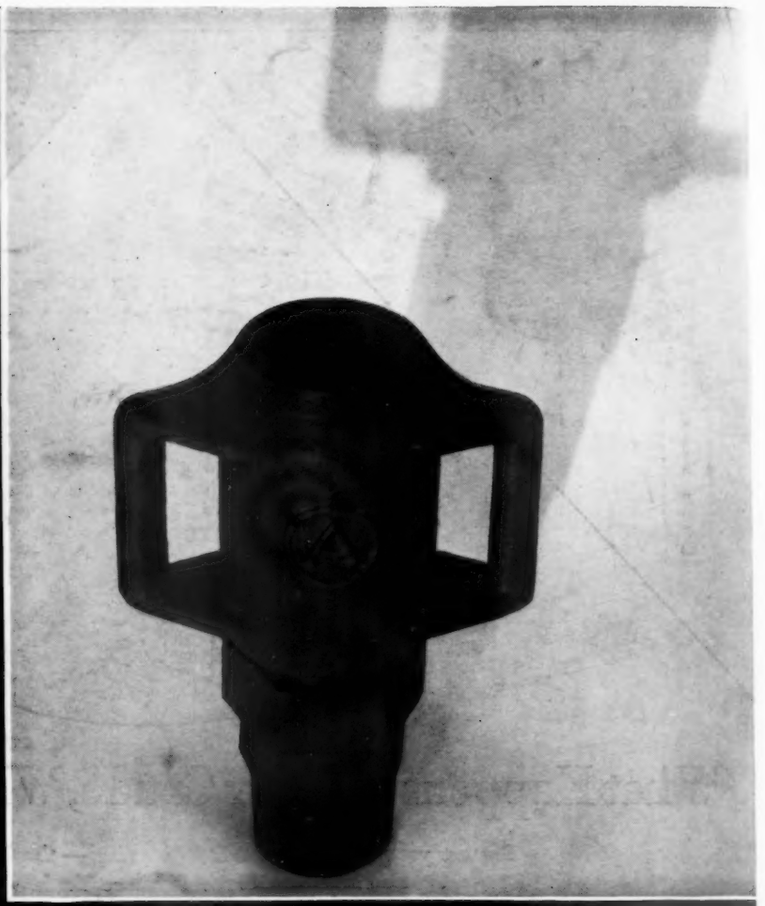

This stuffing box, a result of constant improvement over a period of 25 years, is more widely used throughout the oil fields of the world than any other type. It is used at the top of a well above lead line to provide positive packing around the polished rod, preventing leakage of oil. The upper end of the cap has a reservoir to allow lubrication of the packing around the polished rod. Handles are integrally attached. The glands assure longer life. It can be used with any type of packing desired.

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